

RECORD

✓
19844-20613
19844

F. R. Fosberg

Collection Number Book #9

Nos. 19844 - 20613

Jan. 26 - July 18, 1943

Colombia
(2 nos. Virginia)

If found, please return to

F. R. Fosberg

~~404 Edificio Lampar Bush
1078 Ave. Jimenez de Quesada
Bogotá, Colombia~~

R.F.D. #1, Holmes Run Road
Falls Church, Virginia, U.S.A.
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and receive substantial reward.

Collection and Field Book
No. 9
Jan. 26, 1943 - July 18, 1943
(Nos. 19844-20613)

COLOMBIA

Huila, Hobo, along Quebrada del Hobo, valley of Rio Magdalena, road from Campoalegre to Hobo, Quebrada Cuandinosa, above Gigante, near foot of ridge bet. Quebrada Aguablanca and Quebrada Chonta, Finca Miravalles, above Finca Miravalles	19844-19877	2-9
Below Finca Miravalles, Quebrada Cuandinosa drainage ridge, Quebrada Cuandinosa drainage, top of first high hill on ridge s. of Quebrada Cascajosa, Finca los Cedros, above Finca los Cedros, Finca la Estrella, s. of Quebrada Cucaracha, ridge s. of Quebrada Cucaracha, below Finca la Estrella, slope n. w. of Quebrada Cucaracha, top ridge bet. Quebrada and Q. Damas, saddle below Finca los Cedros,	19878-19934	8-23
Huila, Valley of Rio Guarapas between Pitalito and Palestina (description)		24-25
Ridge between the Rio Guarapas drainage and Rio Guachicas drainage, bet. Huila and Cauca, above Palestina along Quebradona, 19935-20028		26-41
Huila, Pitalito, Las Mesitas, Lavaderos, s. of San Augustin, Rio Naranjo, s. of San Augustin, near mouth of Quebrada La Candela, ridge n. of Quebrada la Candela, affluent of Rio Naranjo..	20029-20130	44-61

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<u>Huila</u> , Pitalito, Las Mesitas, Lavaderos, s. of San Augustin, Rio Naranjo, s. of San Augustin, near mouth of Quebrada La Candela, ridge n. of Quebrada la Candela, affluent of Rio Naranjo..	20029-20130	44-65

1.

Pages

COLOMBIA

<u>Huila</u> , ridge bet. Rio Naranjo and Quebrada la Candela, s.w. of San Augustin, near confluence of Quebrada la Candela with Rio Naranjo, s.w. of San Augustin, near San Augustin, Gorge of Rio Magdalena	20131-20141	64-69
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<u>Putumayo</u> , above Encino, above Laguna de La Cocha, near Paramo de San Antonio (San Bernardo), bet. Encano and Santiago, Sachamates, drainage of Rio Mocoa, Rio Susunga, drainage, small affluent of Rio Putumayo along Camino Heusdura (to Mocoa)	20342-20404	116-129

... 2

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Collection and Field Book

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	<u>Pages</u>
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... 2



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10700	3350	3290
10800	3380	3325
10900	3415	3355
11000	3445	3385
11100	3475	3415
11200	3505	3445
11300	3535	3475
11400	3565	3505
11500	3600	3540
11600	3630	3570
11700	3660	3600
11800	3690	3630
11900	3720	3660
12000	3750	3690

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500	155	3900	1200	7300	2260	215
600	185	4000	1230	7400	2290	215
700	215	4100	1260	7500	2325	210
800	250	4200	1290	7600	2355	210
900	280	4300	1325	7700	2395	210
1000	310	4400	1355	7800	2415	210 white.
1100	340	4500	1385	7900	2445	210
1200	370	4600	1415	8000	2475	210
1300	400	4700	1445	8100	2515	
1400	430	4800	1475	8200	2550	
1500	460	4900	1505	8300	2580	
1600	490	5000	1540	8400	2640	5
1700	525	5100	1570	8500	2645	5
1800	555	5200	1600	8600	2675	5 white.
1900	585	5300	1630	8700	2705	5
2000	615	5400	1660	8800	2735	5
2100	645	5500	1690	8900	2765	5
2200	675	5600	1725	9000	2805	5
2300	710	5700	1755	9100	2835	5
2400	740	5800	1785	9200	2870	5
2500	770	5900	1815	9300	2900	5
2600	800	6000	1845	9400	2930	5
2700	830	6100	1875	9500	2960	5 leaves
2800	860	6200	1905	9600	2990	5 nce
2900	890	6300	1940	9700	3030	5 not
3000	925	6400	1970	9800	3060	5 not

2/1943 - Colombia

✓ Jan. 26 - Hobo, along Quebrada del Hobo, valley of Rio Magdalena, Huila
moist bottom land 675 m.
along road

19844 Boneria

45 Boneria

✓ Jan. 26 - Valley of Rio Magdalena, road from Campoalegre to Hobo, Mun. de Campoalegre just n. of boundary of Mun. de Hobo. Huila
weedy roadside, somewhat grazed. 620 m.

46

47 Boneria

48 Boneria

✓ Jan. 27 - Quebrada Cuandinosa, above gigante, near confluence of Quebrada Aguablanca and q. Chonta, Mun. de gigante, Huila
Thicket of second growth 1100 m.
woods along trail.

49

Tournefortia

✓ Jan. 27 - ~~Ridge bet~~ near foot of ridge between Quebrada Aguablanca and Quebrada Chonta, above Quebrada Cuandinosa, Mun. de gigante, Huila 1100 m.
bare hillside, but with a few small trees along trail.

50

Dioscorea

Huila

3

erect, fls. white.

weak, ascending, fls. white.

fls. white

erect, fls. white.

ascending or erect, fls. white.

scandent shrub, fls. white

vine climbing in trees, leaves glossy, fruiting inflorescences pendent, fruits tri-lobate, not quite mature.

19851 *Vismia*

✓ Jan. 27 ^{Finca} - Miravalles, on ridge
bet. quebrada Aguablanca and
Quebrada Chonta, Mun. de Gigante,

Huila 1850 m.

52 *Callitriche deflexa* var. *subsessilis* Fassett (ind.)
abundant, covering muddy ground
in yard.

det.
M.C.F.

53

abundant in thick woods above finca

✓ Jan. 28 - Above Finca Miravalles,
ridge bet. the Rio Blanco drainage
and the quebrada Cuandimosa drainage,
Mun. de Gigante near border of Mun.
de Algeciras,
thick wet woods.

Huila
2000 m.

54

Cinchona
small patch or "mancha" of trees
said to have been planted many
years ago from sucker sprouts of
trees that had been cut down.

55

Rub.

small tree 6 m. tall, leaves
copper-brown beneath,
lates red, flowers brownish-
white, fruit immature

prostrate forming a close mat,
fruits minute, green. "berro"
^{with other plants} infusion good for liver. infusion
made with corn silk and Equisetum

- for liver
small tree, ~~flowers~~ corolla deep
crimson, with cream colored
stamens, corolla fades to
light magenta. calyx
and ovary deep purple-black.
"chilca"

Anal. Ballis:
B+C 1.7%
Ci 0.8%
qui 2.0%
TC 2.5%

tree 10 m. tall, 10 cm. thick, leaves
dark green, glossy above, midrib
and petiole reddish, thin, ^{fruit}
coriaceous, stipules becoming ^{immature}
red in age. (bark sample - "quina tuna")
small tree 5 m. tall, dry fruits
below leafy twigs.

19356

14 57

Ladenbergia
abundant

58

on tree trunks

59

Trichomanes

on deep humus on ground, very
abundant.

12 60

Cinchona *sp.*
abundant in "manchali" patches,
said to have been planted
many years ago from sucker
sprouts of trees cut down.

61

Blechnum
common

63

Blechnum

64

Lycopodium

65

on mossy, decaying fallen tree trunks
only 4 plants seen, 3 in a clump.

7 66

Asplenium
in humus

67

Polypodium
in humus and on mossy log

3 68

Trichomanes
climbing on tree trunks, ~~fronds pendent~~, abundant

shrub, fls. white
Anal. Bellis: tree 15 m. tall, fls. white
not more very fragrant. (bark sample)
than traces other trees much larger.
of cinchona "ojancho" wood very
alkaloids. hard, much used.
scape pendent, fls. brown,
sepals with cross bands
of yellow, lip yellow.
erect, arching.

Anal. Bellis

Q+C	1.8
Li	0.5
Qui	2.2
TC	2.3

tree 12 m. tall, 15 cm. thick,
bushy at top, leaves
rather glossy above,
fruit immature (bark sample)
"quina tuma"

vine, fls. white
rhizome rather short,
in loose humus, fronds
ascending.
sterile plant, apparently
same as #19862, but stipe
much more scaly.
square stemmed, hollow stemmed
shrub, 5 m. tall, buds only.
erect, blade reflexed, spikes
erect. stipe fleshy, blade
somewhat so, roots fleshy.
fronds arching
rhizome ^{base} glaucous green.
fronds pendent

19869

on mossy tree trunk, near base

70

on thick humus

71 Palicourea

edge of clearing, common.

72

on humus and decaying logs

73 Hydrocotyle

bases of old stumps in clearing

74 Palicourea

edge of clearing

75 Cinchona pubescens

isolated tree on top of hill otherwise
cleared and in pasture, at
slightly higher alt. than nearby
C. officinalis.

76

thicket in second growth along trail

77 Tournefortia

Jan. 28 - Below Finca Miravalles,
on ridge bet. Quebrada Aguablanca
and Quebrada Chonta, Mun. de
Gigante, Huila

1700 m.

78 Cinchona pubescens

remnants of forest along ridge

leaves fleshy coriaceous,
- fls greenish to yellowish,
fls. whitesmall tree 5 m. tall, thyrse
red-purple, corolla blue
outside, lobes green. ^{20 = 19874} for fruit

creeping

small tree 6 m. tall, fruit
blue-black when mature
- see ~~#19870~~ #19871 for fls.Anal. Bellis: tree 15 m. tall, 3 dm. thick
gTC 1.0% or more (bark sample) bark
Ci 1.2% rough, thick. leaf veins
Qui tr red, stipules small, strongly
TC 2.2% reflexed from the first.~~tree~~ tangled herb or
subfrutescent herb about
2 m. tall, fls. orange
with yellow lobes, mature
fruit said to be 2.5 cm. in
diameter and edible (none seen).
scandent shrub, fls. white.

anal. Bellis

gTC tr

Ci 0.7%

Qui tr

TC 0.7%

Tree 10 m. tall, 15 cm thick, leaf veins
pinkish beneath, some lvs. red, stipules
green, erect. bark rough, corky (bark sample)

Jan. 28 - Quebrada Cuandimosa
drainage, ^{ridge} bet. Quebrada
Aguablanca and Quebrada Chonta,
Mun. de Gigante, Huila
woods along ridge 1500 m.

19579

Monina

?

80 *Condaminea corymbosa*

Quebrada Cuandimosa drainage,
Jan. 28 - lower part of ridge bet.
Quebrada Aguablanca and
Quebrada Chonta, Mun. de
Gigante, Huila 1100 m.
mostly cleared land,
cultivated or in pasture,
scattered trees along trail
on ridge

81 *Ladenbergia magnifolia*

Jan. 30 - top of first high hills ridge
s. of Quebrada Cascajos,

cleared country with some ^{Huila}
second growth. 1900 m.

82 *Dichromena*

wet weedy place beside trail

83

Gonzalagunia

thickets along fence by trail

vine climbing in trees,
- fls. deep violet.
shrub 3 m. tall, fls.
deep purple outside, green
within.

anal. Ballis.
not more
than trace
of cinchona
alkaloids.

tree 15 m. tall, 2 dm. thick,
fls. white, fragrant.
(bark sample)

small tufts, involucre not white
- heads white
shrub 4 m. tall, arching,
fls. white, fruit fleshy, gray

Jan. 30 - Finca Los Cedros on
ridge s. of Quebrada Cascajosa,
2 km. s.e. of Garzon

bushy fence row bet.
trail and pasture

Huila
1600 m.

19884

Viburnum

85

86 *Cinchona pubescens* Vahl
common along trail, ~~etc~~

87 *Rubus*

88 *Cinchona pubescens* Vahl
common along trail

89 *Ermeorrhiza umbellata*

90 *Cinchona pubescens* Vahl
common along trail

Jan. 31 - above Finca Los Cedros, on ridge
s. of Quebrada Cascajosa 9 km.
s.e. of Garzon
in second growth in clearing on ridge

Huila

1700 m.

91

92 *Blechnum*

small tree, 4 m. tall, fruits
dark blue.

vine climbing in bushes,

fls. white

"ojancho" ^{canchoso}
small tree, really a stump
sprout, 4 m. tall, ^{leaves light green beneath,} veins red.

semi-scandent shrub

3 m. tall, inf. fruit black.

rather sweet and edible.

small tree, really a stump

sprout, 5 m. tall, leaves

light green beneath, veins

reddish. "ojancho" ^{canchoso} ^{stipules} erect, later reflexed

woody vine climbing in

bushes, fls. white

sterile stump sprout

2 m. tall, leaves

red-purple beneath, stipules

erect, obtuse, on large

shoot, bifid. "ojancho" ^{canchoso}

scandent shrub, fls. white, fruit brown
fertile fronds erect, sterile
arching, young fronds red-purple

- 19893 *Ladenbergia*
edge of clearing, abundant
- 94 *Ladenbergia*
edge of clearing, abundant

Jan. 31 - Finca la Estrella, s. of
Quebrada Cucaracha, one of the
headwaters of Quebrada Damas,
about 12 km. s.e. of Garzon, Huila
Thick forest with clearings 1600 m
here and there.

- 95 *Drymaria cordata* (L.) Willd.
muddy place along trail in pasture

Jan. 31 ridge s. of Quebrada
Cucaracha, ~~at~~ one of the headwaters
of Quebrada Damas, about 12 km.
s.e. of Garzon, ridge above Finca
la Estrella, Huila 1600 m

- 96 *Cyclanthus Carludovici*
moist forest

- 97 *Wernmannia*
moist forest

- 98 *Bidens*
weed in clearing

- 99
moist woods in deep humus

- 19900 *Polypodium*
on base of tree trunk

anal. Bellis:
not more
than traces
of anemone
alkaloids.

stump sprout from large
stump. "ojancho blanco"
tree 12 m. tall, 3 dm. thick,
fls. white, fragrant, bark
1 cm thick, hard, warty, with
a woody-granular layer
(bark sample). "ojancho blanco"

prostrate, spreading, fls.
white, petals small, bifid
to base of blade into two
linear-lanceolate lobes,
fruiting pedicels viscidous,
easily detached.

1600 m. stem about 4 dm. tall, spike
green, leaves deeply bifid
at apex.

tree 10 m. tall, 8 cm. thick, fls. white
ray white, disk yellow.

..

..

..

..

bluish green, veins pellucid

19901 *Dictyostegia orobanchoides* (Hook.) Hieron subsp.

in moist or wet woods, ^{*parviflora purdieana* (Benth.) Snelders & Maas det. Maas 1983} deep humus

02 *Columnea*

in recent clearing in wet forest

03

in recent clearing in wet forest

04 *Cinchona*

recent clearing in wet forest. apparently a "mancha" of this plant was cut, as suckers are coming up abundantly.

05

~~edge of~~ edge of clearing in wet woods

06

wet woods

07

Polypodium Grammitis longica (Presl) Metton
wet woods det. Schinger 1969

08

moist woods

09

wet woods, along trail, on fallen tree.

10 *Mertensia*

on humus by trail, wet woods

Feb. 1 - below Finca la Estrella, on Quebrada Cucaracha, ~~an tributary~~ one of the headwaters of the Quebrada Damas, 12 km. s.e. of Garzon, Huila 1500 m.

11 *Solanum*

pasture, climbing over stumps

1800-1900 m erect, fls. white

1900 m caespitose, erect, ~~fls.~~ leaves with a red ~~of~~ patch at tip on under side.

fls. bright butter yellow

wine, leaves purple beneath, fls. dirty white.

suckers or stump sprouts about 3-5 dm. tall. stipules red.

shrub 2 m. tall, fls.

yellow-green.

erect herb to 1 m. tall,

2000 m.

pendent from tree trunks.

1800 m.

scandent shrub.

stems terete, fls. bright yellow.

prostrate, branches erect fls. yellow-green, fruits scarlet.

vine, fls. white, fruit immature

19912

thickets near stream

13

wet places near stream

14

Sarcocolla

thickets near stream

15

thickets near stream

16

Salvia

wet places and thickets near stream
abundant

17

Lanicula

along trail near stream

18

along trail near stream

19

Hydrocotyle

abundantly carpeting ^{wet} ground
in grazed places ~~wet ground~~ near stream

20

Acalypha

thickets in canyon, near stream

21

Solanum

climbing over rocks in openings
near stream

herb with stinging hairs,
petals white, enclosing
stamens, between them
large sac-like stamens
yellow with red bands
near center.

fls. white

shrub 2 m. tall, inflorescence
reddish brown, fls. white
suffrutescent herb ~~to~~ 1 m.
tall, corolla scarlet, lobes
orange within, column
yellow, anthers crimson.

herb up to 1 m. tall,
buds enclosed by red bracts,
forming a pendent strobile,
flowers scarlet.

ray: white.

prostrate, forming a carpet,
fls. white, peduncles erect.

shrub 1-2 m. tall, incompletely
dioecious, ^{paniculate} spikes pendent
staminate ~~at~~ ascending
staminate fls. white,
pistillate with ovary green
styles red.

vine, fls. white, fruit scarlet.

19922 *Selaginella*
shaded bank

23 *Pilea*

~~at~~ moist open place near stream

24 *Cinchona pubescens*;
top of steep bank beside
stream

25 *Hydrocotyle*

growing on top of stump in pasture

Feb. 1 - slope ~~near~~ n.w. of
Quebrada Lucaracha, one of the
headwaters of Quebrada Damas,
10 km. s.e. Gajon, Huila 1600 m.

26 *Palicourea*
moist woods

27 *Coccoloba*
moist woods

Feb. 1 - Top of ridge bet. Quebrada
Cascajosa and Q. Damas, 9 km.
s.e. of Gajon, Huila 1700 m.
moist woods

28 *Liphocampylus scandens* (HBK.) G. Don
bushy clearing along trail.

Feb. 1 - Finca los Cedros, on ridge
s. of Quebrada Cascajosa, 8 km. s.e.
of Gajon, Huila 1600 m.

arching, flat surface
toward light.

anal. Ballis: clump of sprouts about
10 cm tall and 1 dm. thick
Ci 0.2% from a large stump, leaves
fri to with veins reddish beneath
TC 0.2% (bark sample)

suffrutescent herb 1 m.
tall, scarcely branched,
thyse golden-yellow,
immature fruit black
- with yellow calyx.
fruit blue, fls. lavender

vine, fls. deep red-purple.
(stems not rough)

19929 patch of woods left in clearing

30 *Cinchona pubescens* Vahl

Feb. 1 - saddle below Finca los Cedros
on ridge s. of Quebrada Cascajosa
7 m. s.e. of Gárgon, Huila 1500 m

31 *Hedyosmum*
patch of woods left along
trail

32 *Ladenbergia magnifolia*
common along trail between ~~1400~~
1400 and 1600 m.

Feb. 1 - steep slope at head of
small quebrada ~~at Gárgon~~
in hills above Gárgon, ridge
s. of Quebrada Cascajosa, Huila, 1400 m.
small patch of woods left in
clearing.

33 *Chiococca alba*

34 *Cosmibuena*

vine climbing in trees, fls. yellow,
pleasantly fragrant.
anal. Ballis: tree 10 m tall, 2 dm thick
g.c to below where it had been broken,
Ci 0.6% 1 dm above, leaf veins reddish
g.c to beneath (bark sample)
TC 0.6%

small tree, fruit green,
herbage with a delicious
spicy-fruity odor when
broken. "grango"
tree 15 m tall, 2.5 dm thick,
flowers white, fragrant,
fruiting clusters pendent,
not quite mature

semiscandent shrub, fls. yellow
tree 10 m tall, 2 dm thick,
leaves glossy, leathery,
veins indistinct, fruit
beginning to dehisce, buds green

Feb. 4 - Valley of Rio Guarapas
between Pitalito and Palestina
and a bit above Palestina, Huila

1370-1600 m. ~~1500~~

About Pitalito the valley is broad and flat, largely devoted to pasture. The river has cut a ravine into it with steep sides. Going up the river the valley gradually narrows until, below Palestina, where the quebrada Quebradona joins it, the plain has quite disappeared, and the low mountains come together. The map of Huila prepared by the Oficina de Longitudines, Bogota, is apparently seriously in error about the distances in this valley, as in 7 hours slow travelling we covered a distance that would be 40-50 km. on the map. Either the whole drainage is entirely too long, or the Quebrada Quebradona should join the river much lower down, or Pitalito is too near the mouth of the river.

A decidedly oriental cast is given to the landscape by the bamboo plus the steep mountains and low patchy clouds.

Here, as usual, most of the forest is cleared. A few tiny patches remain on steep places, as well as coffee plantations in the ravines. Rodriguez says the bamboo here is native, not planted.

Bamboo (~~Bambusa~~ *Guadua* sp.?), the same as observed in other parts of Huila and collected near San Antonio Fotalacillas, is more abundant here than seen anywhere else. (Rodriguez says than anywhere else except Caldas), and is the most conspicuous thing in the vegetation near the river and streams. Places where the rhizomes are somewhat exposed show that they are deeply buried, from 2 to 6 dm., and are as much as 10-15 cm. thick. Each culm terminates a branch up to 1 m. long, and one or two other branches arise below the culm.

The wood, up to 1 cm. or more thick, is used for innumerable purposes here, more than seen anywhere else. The frame-work of the mud houses is of bamboo, with split bamboo tied or nailed ^{poles} to it horizontally, then mud filled in and plastered outside. The fences are of horizontal split bamboo woven or vertical split bamboo. Aqueducts are constructed of half-bamboo conduits or bamboo poles. Gate hinges are 2 joints of bamboo with holes in each internode. Ladders are one piece with notches, etc. etc.

Feb 6 - On and about the
 juncture of the ridge between
 the Rio Guarapas drainage
 and Rio Guachicas drainage
 with the Cordillera Oriental
 boundary bet. Huila and ~~Cauca~~
 Cauca.
 mossy ridge-type rain forest
 deep humus

19935

Palicourea

2200 m

- 36 *Cinchona officinalis*
 occurs in "manchas" and
 scattered through the forest,
 but mostly seedlings and
 root sprouts. Has been
 repeatedly harvested, even
 recently.

24154
112278

37

38

Elaphoglossum

39

covering old rotting tree stumps
 covering humus and sticks
 in trail

headwaters of Rio Guachicas

(root bark)

anal. Bellis:

g+c 5.3%

(g₅₀ 3.8%)

ci tr

gui 0.1%

TC 5.4%

(trunk bark)

anal. Bellis:

g+c 3.0%

(g₅₀ 3.0%)

ci tr

gui tr

T.C. 3.0%

slender erect shrubs 11 m
 tall, fls. yellow with green
 corolla lobes. Infl green.
 sterile sprouts from
 partially fallen tree
 7 cm. thick and 3 m tall,
 leaves dull above, midrib
 red, stipules reddish.
 Bark at most 3 mm. thick,
 a thin brown or gray-brown
 layer outside, the rest
 greenish-white, quickly
 oxidizing red-brown, staining
 hands the same color.
 (Bark samples - root and trunk)
 "quina tuna" "quina finca"

slender shrub 1 m tall,
 fls. whitish.

2 28

1943 - Colombia

19940

Polypodium

epiphytic on tree-trunks
1 m from
near ground

41

in thick ^{bushy} ground cover under trees

42 *Palaemon*

19

43

44

in humus on ground, also
ascending among bushes

45

46 *Hedyosmum*
abundant

47

48 *Polypodium* *longior* (Desv.) *moribunda*, *Sargassum*
det. Z. L. Sargent 467

epiphytic on tree trunks
49 *Hymenophyllum*
climbing on small shrubs

Huila - Cauca

29

pendent

stem about 1 m. long,
mostly on ground.

- inflorescence erect
scandent shrub
tangled in lower part
of tree, 4 m. from ground.
fls. incl. green, fls. greenish-
yellow, corolla lobes greenish.
shrub 1.5 m. tall, leaves
very rugose, stems and
inflorescence ^{purple} red, fruit
bluish.

- short leaves, roots tuberiferous,
fruit yellowish-green.

shrub 2 m tall, fruit
- fleshy, grayish-white
tree 4 m. tall, leaves
aromatic when broken, but
with a rather lemon-scented
odor.

- slender shrub 1.5 m tall
(same as 19477 but fruiting.)
pendant

rhizomes forming networks
on surface of shrub.

same heat 2300 m.
 small humus-covered
 knob with low vegetation,
 surrounded by cloud-forest.

19950 Cyathea

51 Weinmannia

52

53

the dominant plant

54 Vaccinium

abundant on ground and in trees

55

in bush on ground, seen lower
 down in forest high in trees

56

57 Vaccinium

common on ground

58 Ladenbergia

slender, not over 1 m tall, fronds
 drooping at tips and tips of
 - pinnae.

- small bushy tree, in
 - bud only "entomillo"

- shrub 1.5 m. tall, bushy,
~~stem~~ branching, covered
 with dead leaves. up to
 over a meter long, racemes
 and inflorescences erect.
 - fls. yellow, fruit glw-black
 tangled shrub

shrub 1-1.5 m. tall, lvs.
 fleshy-coriaceous, pale
 beneath, infl. and fruit
~~red~~ bright red, ~~fls.~~

- corolla pink, 5 parted
 shrub 1 m. or less tall,
 fls. whitish, fruit
 - marked with brown.
 tangled low shrub.

anal bellis:
 not more
 than traces
 of cinchon
 alkaloids.

bushy tree 3 m. tall, fls.
 white, fragrant, very
 brittle, fruit pyriiform.
 splitting from apex.
 B&S sample

Feb. 6th - ridge bet. Rio Guarapae drainage and Rio Guadicaes, just below the main ridge of the Cordillera rain forest, top of ridge 2000 - 2300m

19959

60 Palicourea

61 Polypodium
epiphytic on tree trunks62
terrestrial63
terrestrial in deep loose humus

64

65

seedlings and sprouts ~~seen~~
abundant but no large trees seen.

66 Phoradendron

on dead fallen tree (not identified)

67 Lophocampylus scandens (HBK) G. Don
det. M. V.

68

69

70

71

terrestrial, in deep humus

slender shrub 2 m tall
- fruits white.
slender shrub 4 m tall,
- infl. & flo. bright purple
- fronds arching and
pendent & ascending at tips
stem 1 m. long, ^{marked with yellow} ~~marked~~ ⁱⁿ ~~marked~~ ^{marked}
calyx rose, corolla white
scape arching, flo. orange-brown

liana climbing in lower
branches of tree
stump sprout 6 m. tall,
fruit immature, two dry
unopened corollas in one infl.
"ojando"
very brittle, fruit whitish

liana climbing in ~~tree~~ small
trees, fls. beautiful crimson,
- anthers greenish-gray
liana climbing in trees,
- fls. white
small tree 6 m tall, leaves
coppery beneath, fruits green;
- not noticeably lactiferous
shrub, inflorescence purple
- fruit immature.
fronds erect, arching, dark green.

34

1947 - Colombia

19972

- 72 *Trichomanes*
epiphytic
- 74 *Cinchona officinalis*
steep slope, scattered, ^{no. 0.3}
large trees seen, many ^{ca: 0.7}
seedlings and sprouts.
Region has been harvested
recently. Said to be many
small trees over a large area.
- 75 *Elaphoglossum*
epiphytic on trunk of tree, common
- 76 *Asplenium*
epiphytic on trunk of tree
- 77
deep humus
- 78 *Ladenbergia*
common from here down
- 79 *Carludovica*
common
- 80 *Colocasia*
1800-1900m
- 81
terrestrial in deep humus in recent
clearing
- 82 *Pilea*
in recent clearing
- 83
shaded opening in forest, terrestrial
in humus

A
B
C
D
EA
B
C

B7

35

"o. fls
in treeall
lull
reddish
thin,

"lins"

ice

ifid,
maon-
urple
& and
scarlet,'with
large
fleshy

stips

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19972

73

74

75

76

77

78

79

80

81

82

83

shaded opening in forest, Terrestrial
in humus

erect shrub 3 m. tall, fls
whitish.
fronds pendent from tree
trunks.

Anal. Bellis:

F+C 9.0%

(F 5.6%) 4.4%

C: 1.5

F: 1.5

TC 4.0%

29.03
Ca: 0.7

La.

moss

small sapling 4 m. tall,
3-4 cm thick, leaves dull
above, midrib barely reddish,
stipules green, bark thin,
quickly oxidizing.
(Bark sample "1")
"Quing tuna" "Quing fina"

fls. white

Anal. Bellis:

not more

than traces T.C.

tree 15 m. tall, 2 dm. thick
(bark sample)

leaves erect, deeply bifid,
spike erect, crimson.

shrub, leaves red purple
beneath, ~~bark~~ calyx and
lower half of corolla scarlet,
upper half yellow.

fls. crimson, lip tinged with
yellowish and with a large
white scale. leaves fleshy.
stems purple.

1900m

cent

fls. brown, with lip and tips
of perianth yellow.

19972

- 72 Trichomanes
epiphytic
- 74 Cinchona officinalis
steep slope, scattered, ^{no Ra: 0.3}
large trees seen, many ^{Ca: 0.7}
seedlings and sprouts.
Region has been harvested
recently. Said to be many
small trees over a large area.

- 75 Elaphoglossum
epiphytic on trunk of tree, common
- 76 Asplenium
epiphytic on trunk of tree

77 deep humus

- 78 Ladenbergia
common from here down

79 Carludovica
common

80

1800 - 1900 m

81

terrestrial in deep humus in recent
clearing

82

Pilea
in recent clearing

83

shaded opening in forest, terrestrial
in humus

erect shrub 3 m. tall, fls
- whitish.
fronds pendent from tree
trunks.

Anal. Bellis: small sapling 4 m. tall
g+c 9.0% 3-4 cm thick, leaves dull
(L 850g) 4.1% above, midrib barely reddish
li to stipules green, bark thin,
qui to quickly oxidizing.
TC 4.0% (Bark sample)
"Quina tuna" "Quina fina"

fls. white

Anal. Bellis: tree 15 m. tall, 2 dm. thick
not more than traces TC. (bark sample)

leaves erect, deeply bipind,
- ~~fruit~~ spikes erect, crimson.
shrub, leaves red purple
beneath, ~~bark~~ calyx and
lower half of corolla scarlet,
- upper half yellow.
fls. crimson, lip tinged with
yellowish and with a large
white scale. leaves fleshy.
stems purple.

fls. brown, with lip and tips
of perianth yellow.

19984 *Nertera granadensis* (L.) Druce
in humus in recent clearing, rare,
only seen in two spots in this region.

85

in recent clearing, among
old ~~logs~~ logs, stumps + weeds.

86

in deep woods

87

epiphytic

88 *Monotropa uniflora* L.

in deep humus

89

open woods and edge of clearing

90

open woods

Feb. 7 - 2 km. above Palestina, along
~~bed. quebrada and quebrada Aguadilla.~~
s. of Pitalito, Huila 1600 m
Pasture mostly overgrown with
pteridium, with wooded ravines.

91

under ferns

92

~~by~~ *Leptorhynchium*

93

Borreria

common

94

common

95

Hypericum

small wet place

96

Daucus

prostrate, light green,
fls. yellow-green.

vine, fls. purplish-white.

shrub 1.5 m. tall, fls. green,
- ripe fruit lavender.

lip and edges of upper lip of
fls. deep purple, center green.
- leaves fleshy.
erect, dead.

spike green

erect shrub up to 1 m. tall, spike
purple, fruit red. lower part
of stem with aerial roots.

fls. yellow, marked with
- purplish brown.

fls. white, plant erect or
- ascending.

spikes erect, fls. purple.

fls. yellow.

fls. white.

19997

wooded ravine

98 Boehmeria
single tree left in pasture99 Sambucus
single tree planted near house20000 Eupatorium
weed in pasture01
weed very common in coffee plantation02 Salvia
weed in coffee plantation03 Lida
weed in coffee plantation04
weed in coffee plantation05 Browallia
weed in coffee plantation06 Bidens
very abundant weed in and
around coffee plantation07 Salvia
abundant weed in pastures
and cultivated places08
wooded bottom land09 Galium
wooded bottom land, edge of
clearing

large liana ^{quince of stem} said to be
used to cure snake bites, taken
orally. "añaguasca"
tree 4 m. tall, spikes pendent.

small tree, flowering
profusely but seldom
setting fruit. Inflorescence
hemispherical, fls. white
bark used as purgative
"sauco"

herb, m. tall, branched.
flowers lavender.
fls. yellow "botoncillo"

fls. blue.

sprawling weed, up to
7 dm. or 1 m. long, fls. yellow.
herb up to 1 m., sprawling,
fls. bright chrome yellow.
flowers brilliant blue-
purple

disk orange-yellow, rays
white. ~~etc~~ from running
rhizomes.

fls. deep blue-purple.

fls. pinkish white.

vine-like, roots red-orange, used
for a dye for cloth, fruits
orange, fleshy "raicilla"

70010

Acalypha

wooded bottom-land

11

weedy clearing in wooded bottom-land

Heliconia popayanensis HBK.

12

~~*Heliconia*~~

common in wooded bottomland

"Palso"

shrub 2.5 m tall, ² spikes
pendent, & ascending styles
corolla-colored

vine, rachis of inflorescence
thicker than stem. upper
flowers brilliant scarlet,
lower ones green, deep purple
distally.

tall trees, up to 3-4 dm.
in diam here, said to
reach over 1 m. down the
river. (specimen of leaves
from seedling) (specimens
of bark and wood from
large tree). 7-8 m bare
for some meters.

Dr. Romulo Quellar is
much interested in the
fiber from the inner bark.
It can be easily peeled
from the full length of the
logs, dried in about 5 days,
decorticated by hand with
no difficulty. The fiber
is light brown, quite fine,
much more so than fique,
and much stronger and
more durable. The fibers
are extremely long, and
are used locally for rope,
twine, halters, cinches,
pack saddles, etc. Enormous
quantities could be produced here
and in other parts of the country.

Feb. 8 - Palestina, along quebrada,
s. of Pitalito, Huila, 1800 m.

20013 *Palicourea*
bushy cut-over land

14 *Psychotria*

15 *Jussiaea*

abundant in muddy places

Feb. 8 ^{along} - Quebrada 3 m. below
Palestina, s. of Pitalito,
Huila 1700 m.

16 *Cinchona pubescens* Vahl.

patch of woods in ravine,
mostly bamboos.

(sprouts and seedlings of this
occasional throughout region below Palestina)

17 *Palicourea*

patch of woods in ravine

18

Feb. 8 - Rio Guarapas 5 km. below
Palestina, s. of Pitalito, Huila
bushy hillside 1600 m.

18

19 *Coccoloba*

common

20 *Emmenanthe umbellata*

21 *Ladenbergia magnifolia*

sprouts common in cut-over slopes

shrub 4 m. tall, infl. red-purple
fruit blue-black when ripe,

- mostly immature
- bush 1 m. tall, fruit immature
prostrate, stems fleshy,
forming a carpet over
mud. fls. bright
yellow, 5-merous

Anal. Bellis: small tree 6 m. tall, 1 dm.

T.C. Fr.

thick, bark gray, older
leaves red, others with
reddish veins, stipules
green, erect (bark sample.)
small tree 5 m. tall,
infl. and fls. orange-red,
fruit immature

anal part
off valley.

vine climbing through bushes.

- fl. yellow, fruit green.
- prostrate, fls. lavender,
- fruit pyriform, blue
- vine climbing in bushes,
- fls. white
- sterile stump sprouts.

20022 *Biophytum*
common on rocky banks

23
common on lower slopes
above stream

24 *Gonzalagunia*

25 *Cuphea*
common weed in open areas
and along trail.

Feb. 7 - Rio Guarapas, 5 km.
above Pitalito, Huila 1350 m.
Wet bottom-land, wooded
principally with bamboo.

26 *Liparuna*

27

28 *Boehmeria*
very common from here to above Palestina

Feb. 9 - Pitalito, Huila 1330 m.
roadsides and fence-rows.

29

30 *Triumfetta*

31 *Triumfetta*

32 *Tournefortia*

leaves somewhat serrated,
~~petals~~ pink, calyx yellow.
bush 2.5 m tall, fruit
reddish, leaves distichous.

shrub 1.5 m tall, fls. white,
4-parted, fruits fleshy,
gray-white.
fls. rose-pink, 2 petals
erect, 4 depressed.

shrub 4 m tall, odor faint
but pleasant, scarcely
resembling lemon-grass,
fruit pyriform, flesh pink,
2 cm. in diam., scarcely
any maturing.
- scandent shrub, fls. lavender
shrub 3 m. tall, spikes
~~drooping~~ pendent.

vine, fls. yellow, fruit fleshy, black.
- inflorescence flat, whitish
- herb 1.5 m. tall, fls. yellow.
- herb 1.5 m. tall, fls. yellow.
shrub 1 m. tall, ripe fruit
orange.

70093

34 Borreria
35 Euphorbia

36 Monnina

37 Lantana

38

39 Acalypha

40

L. *Ditheringia solanacea* L'Her. var. *solanacea*
shaded place det. A.T. Hunziger

41

Stollaria
shaded place, under bamboo

42

Solanum
shaded place, under bamboo

43

shaded place, under bamboo

44

*Solanum*45 *Tournefortia*

46

47

48 *Indigofera*

- fls. white
- fls. white
- scandent herb up to 2 m. long, bracts white
- erect herb 1 m. tall, fls. blue-violet with yellow keel
- erect herb 1 m. tall, fls. purple
- small tree
- small tree, 4 m. tall, monocious but staminate spikes very rare at this season.
- erect herb 1.5 m. tall
- fls. yellowish, ripe fruit red.
- prostrate, fls. white, petals deeply bifid, styles 3.
- herb 1.5 m tall fls. pale green, anthers yellow, fruit immature.
- vine climbing on shrubs, fls. green. leaves variable in cutting.
- herb up to 1 m. tall calyx purple, corolla white fruit immature (another plants ripe ones - orange)
- shrub 1.5 m. tall
- tree 6 m. tall, fls. greenish white
- shrub 3 m. tall, fls. white
- suffrutescent herb, 1.7 m. tall.

20049

Rubus
abundant

50

Feb. 10 - Las Mesitas, 3 km. sw. of
San Augustin, valley of ^{upper} Rio
Magdalena, Huila 1750 m.
small patch of tangled woods

51 *Palicourea*
edge of woods

1 52 *Cinchona pubescens* Vahl
one large tree and several
small ones in a clump.
said to be very common
in the region

Feb. 11 - Lavaderos (ridge bet.
Rio Naranjo and Rio Granadillo)
south of San Augustin, Huila
Patches of thick moist forest
with clearings between.

2000 - 2200 m

53 *Cinchona officinalis*
Abundant in a large "marcha"
the trees much larger along the
trail than in deep forest.

arching shrub 1 m tall
fls. white, fruit
immature
vine climbing in
trees, fls. pale greenish.

shrub 3 m tall, infl.
orange-red, turning red
in fruit, mature fruit blue-black.

Anal. Bellis: large tree, 2 branches
from near base, main
g.c. tr. trunk gone, one branch
Ci 1.7% 3 dm. in diam., 15 m. tall.
Qui tr Bark well over 1 cm. thick,
TC 1.7% very bitter, whitish inside
but quickly oxidizing brown.
(bark sample) "cascajillo"
"requeson"

Anal. Bellis: tree 12 m tall, 2 dm. thick
g.c. tr leaves glossy above, older leaves
Ci 0.2% red, stipules erect, bark ^{1 cm} thick
Qui tr rough, checked, with a brown
TC 0.2% corky layer (bark sample)
fls. red-purple, scarcely fragrant.

50

1943 - Colombia

20054

Brauneria

cleared trail-side

55

56

deep forest

57 *Cinchona officinalis* L.isolated trees scattered
in pasture, said to be about 11 yrs. old.58 *Ladenbergia*~~isolated~~ isolated tree in pasture
abundant in forest59 *Palicourea*

common in forest

60 *Guettarda*

edge of clearing

61 *Viola*

hummock in trail

62 *Fuchsia*

cleared trail-side

63 *Dioscorea*

Huila

51

herb 1 m. tall, fls. purplish-green

- vine climbing in shrubs,
fl. bright yellow with red
- markings near center.
- slender shrub 4 m tall,
fls. white, very fragrant,
both 4- + 5- parted even
- in same inflorescence.anal. bellis. small tree 4-5 m. tall, 1 dm.
not more thick, fls. red-purple, scarcely
than fragrant, hairs white.
traces of bark about 6 mm. thick (bark sample)
Cind. alk. (photos)small tree 8 m. tall, flowers
white, very fragrant,
fleshy. (reaching much- larger size - 20 m. in forest).
- shrub 2.5 m. tall, inflorescence
deep red-purple, corolla
lavender.- tree 15 m. tall, buttressed
trunk 5 dm. thick, fls. white
with thin edges, 5 corolla
lobes.- prostrate, mat-forming,
fls. white, lower petal
- deep purple.- herb 1 m. tall, fls. with
calyx + hypanthium greenish-pink,
petals scarlet, fruit fleshy,
translucent when ripe- slender vine climbing in
small trees, spikes pendent.

- 20044 *Ladenbergia*
abundant in forest
- 65 *Cinchona pubescens* Vahl
common, chiefly as stump
sprouts and seedlings, up
to 2200 m., with *C. officinalis*
but showing no evident
signs of hybridization. ~~stipules~~
~~erect, green, turning red.~~
- 66 *Monnina*
second growth along trail
- 67 *Palicourea*
second growth along trail
- 68
second growth along trail
~~second growth along trail~~
- 69 *Tournefortia*
second growth along trail
- 70 *Tournefortia*
second growth along trail
- 71 *Ladenbergia magnifolia*
isolated tree in clearing on slope

Feb. 11 - Rio Naranjo directly
south of San Augustin, Huila
~~brushy slope~~

- 72 *Cinchona pubescens* Vahl.
steep brushy slope, abundant.
found from 1600 to 2200 m.
- 73
edge of wooded ravine in canyon
bottom
- 74 *Cinchona pubescens* Vahl
edge of wooded ravine in canyon
bottom.

- tree 3 dm. thick, top broken
off.
- Anal. Ballis: small tree 7 m. tall, *
g.t.c. 2. veins reddish, stipules
erect, bark hard, closely
adherent (bark sample)
TC 0.7%. fruits with fungus fruiting
blisters.
- small tree 4 m. tall, fls.
indigo with yellow beel.
shrub 4 m. tall, inf.
red, fruit immature.
small tree 5 m. tall,
fruit green.
- shrub 3 m. tall, fls.
dull white.
- 1900 m. small tree 5 m. tall,
fruits white.
tree 6 m. tall, sterile.
- 1800 m.
- 1700 m. sapling 5 m. tall, leaf veins
red. "naranjo"
- vine, climbing in small
tree.
- shrub 4 m. tall, fls. deep rose,
edges of lobes white, hairs white,
very fragrant. "naranjo"

1943 - Colombia

near mouth of

Feb. 12 - Quebrada La Candela,
 affluent of Rio Naranjo above
 San Augustin, Huila 1900 m.

completely cleared land,
 used as pasture but
 dominated by Pteridium.

Thickets along stream

20075 Trema
 tree in dooryard

76 Borreria
 muddy shaded place

77
 muddy place

78 Drymaria
 muddy shaded place

79 Cardamine
 muddy shaded place

80
 abundant weed in openings
 and shaded places near stream.

81 Centropogon
 fence row, among "figue" plants

Feb. 12 - ridge between Quebrada
 La Candela and Rio Naranjo, West
 of San Augustin, Huila ~~1900 m~~
 cleared land used as pasture
 but largely overgrown with
 Pteridium and clumps of
 bushes, Baccharis, etc.

tree about 5 m tall,
 2 dm. thick, spreading.

- ripe fruit yellow
 weakly erect herb, fls. white

herb up to 2 m. tall, fls. white

fls. white, herb apparently
 annual, branches ascending,

- weak
 fls. white

prostrate branched
 herb, rooting at nodes,

- fls. white, 3 parted.

herb 2 m. tall, somewhat milky,
 fls. green, wvs upper lobes somewhat
 purplish outside. fruit immature

- 20082 *Notholaena*
bare earth above trail
- 83 *Euphrea*
wet place
- 84 *Tagetes*
common weed
- 85 *Castilleja*
scarce
- 86 *Lisyrhinchium*
in thin grassy places
- 87 *Pteridium aquilinum* (L.) Kuhn
dominant plant on cleared hills
- 88 *Ageratum conyzoides* L. (white form)
abundant
- 89 *Galinsoga*
- 90 *Drymaria*
abundant on grassy slopes
- 91
abundant on grassy slopes
- 92
common where not grazed off
- 93
very common weed practically everywhere, these plants from shaded spot.
- 94 *Drymaria*
shaded spot
- 95
shaded spot
- 96 *Lantana*
edge of thicket
- 97 *Baccharis*
dominant shrub in first stage after cutting and overgrazing.

white beneath

fls. pale pink.

herbage with strong unpleasant aromatic odor, fls. orange. tips of bracts red.

tufts, in fruit only

from running rhizomes, these odorless, fronds up to 2 m. tall.

strong odor, white fls.

ray, white, disk yellow. fls white.

rays and disk yellow

erect, petals pink.

herb up to 1 m. tall, fls. orange yellow.

practically odorless

bush 1 m. tall, fls. pinkish.

shrub 3 m. tall, fls. white.

20093 Galium

fairly common in sheltered places

99 Cinchona officinalis x pubescens?
hilltop with clump of woods

Feb. 12 - ridge north of Quebrada la Candela, affluent of Rio Naranjo, south west of San Augustin, Huila moist forest, undergrowth 2000 m. of ferns, on rounded ridge-top.

20100 Cinchona officinalis L.

abundant in a fair sized "mancha", here 50 or 60 trees of all sizes to an acre, not including hundreds of very small seedlings somewhat scattered, but common in the rest of this patch of woods (about 1/2 km. or more long).

01 Anacardium

edge of woods near stream

vine like, climbing among weeds, fruits orange, fleshy.

sprout or seedling, growing with a clump of *C. officinalis*, *C. pubescens* not far away. has every appearance of being a hybrid, in habit, stipules, coloring, etc. resembling *C. officinalis*, but leaves approaching *C. pubescens*. (see # 20131 and # 20135 for probable parents) another similar seedling observed nearby.

tree 15 ~~ft~~^m tall, 2.5 dm. thick, leaves shiny above, rather leathery, petioles purple, blades turning red when old; inflorescence red-purple, fls. purple with white hairs on corolla-lobes; bark brown, longitudinally ridged, a little less than 1 cm. thick (bark sample). herbaceous vine climbing over trees, flowers orange, fruits pyriform, not quite ripe.

Anal. Bellis:

not more
than traces
of cinchona
alkaloids.

g.t.c. tr.

ci. 0.4%

qui. tr.

TC. 0.4%

20102 Weinmannia
edge of woods near stream, common
locally

03

open woods, filled with a
rank growth of Pteridium
2 m. deep, on edge of ravine

04 Sphagnum

woods on ridge top
05 *Dictyostegia orabifoloides* (Hook.) Miess
subsp. *purdieana* (Benth.)
in deep humus Sneliders & Maas det. Maas 1983

Feb. 13 - ridge ~~top~~ n. w. of
Rio Narango, w. of San Augustin
Huila 2100 - 2900 m.
rain-forest (not extreme) on
flat ridge-top

06 Psychotria

07 Palicourea

08

09

the dominant grass in a clearing
used for pasture

10 Cyperus

common in spots in clearing
used for pasture

tree 7 m. tall, fls. white
"enseñillo" used as a
remedy for sickness in livestock
shrub up to 2 m tall
weak, supported by ferns,
leaves leathery, midrib
red, rest of veins obscure,
blade white beneath,
inflorescence and fruits
red, corolla pinkish white,
deep cushioned, pinks.
"barbacha"
whole plant whitish.

shrub, 1 m tall, fls. white,
fruits mostly immature, blue
when ripe

shrub 2.5 m tall, infl. and
fls. purple

shrub, fls. white, very fragrant.

fruit immature
forming a thick cushion,
styles protruding from
terminal bud. parts quicui
spikes black with
yellowish edges

1943 - Colombia

20111

Senecio

clump growing on stump in clearing

12

climbing on fence ~~at~~ in clearing

13

14 *Hymenophyllum*

on base of small tree.

15

~~Senecio~~16 *Drymaria*

in grassy clearing

17

abundant on tree-trunks

18 *Blechnum*

abundant

19 *Psychotria*20 *Ladenbergia*

common in forest

21

edge of forest climbing on tree trunk

22 *Palicourea*

abundant in undergrowth

Huila

short scandent herb, fls. bright yellow, odor unpleasant.

vine, fruit black.

tree 5 m. tall, leaves glossy, rugose, fruits spherical, - globose, immature rhizome climbing on base of tree-trunk, prostrate somewhat arching.

herb less than 1 m. tall, fls. yellow, calyx yellow-green, fls. white, petals bifid.

rhizome occasionally climbing

- shrub 3 m. tall, fls. yellow

"anal. bellis": tree 20 m. tall, 3 dm. thick, not more than (others much larger) flowers traces of white, fleshy, fragrant; cinch. alkal. - "requezon".

woody vine climbing for several meters up tree trunk, stems red-purple, calyx green, corolla lemon-yellow with green lobes.

- shrub 3 m. tall, inflorescence bright purple, fls. lavender, fruits very juicy, blue-black. "futillo".

20123 *Drymaria*
abundant in clearings

24 *Miconia*

25 *Blechnum*

26 *Blechnum*

27

in undergrowth

28 *Cinchona officinalis* L.
very rare

29 *Palicourea*

30 *Cinchona officinalis* L.
very rare here

Feb. 14 - ridge bet. Rio Naranjo
and quebrada La Landela, ^{with west}
of San Augustin, Huila 1900 m

31 *Cinchona officinalis* L.
clump of woods on hilltop

32 *Coccoloba*
edge of woods, in grass.

33 *Palicourea*
clump of woods

herb up to 8 dm tall, ~~very~~ weak,
supported by other plants,
has grayish cast due to
pubescence, fls. white, petals
- bifid, "alberquilla"
tree 1.2 m. tall, fruit immature.

rhizome climbing about
- 1 m. up trunk of tree.
herb up to 1 m. tall.
- fls. white.

sterile
2200 m. sapling 3 m. tall, leaves
dull above, stipules pointed.
(like plant at head of Rio Villalobos)
shrub 2 m. tall, fls.
- yellow.

sterile sapling 3 m. tall,
leaves dull above, stipules
blunt (intermediate between
#20128 and #20100).

~~sterile~~ sapling 3 m. tall,
(nearby were large trees)
old leaves red. "quina canchosa"
bark said to be worthless, by old
quineros, and to have been used ^{by adulterators}
prostrate, fls. lavender. ^{good bark is "quina"}

shrub 1.5 m. tall, infl.
yellow, fruit green.

20134

clump of woods on hilltop

35 *Cinchona pubescens* Labl.
end of clump of woods
on hilltop36 *Solanum*

near clump of woods on hilltop

37 *Ladenbergia*

clump of woods on hilltop

38 *Borreria*

grassy place on edge of woods

Feb. 14 - near confluence of
Quebrada la Candela with
Rio Naranjo, ^{south} west of San
Augustin, Huila 1350 m.39 *Palicourea*

bushy slope

Feb. 14 - near San Augustin
Huila 1700 m.40 *Rhus* (*Toxicodendron*)Feb. 14 - Gorge of Rio Magdalena below San
Augustin, Huila 1550 m.41 *Ochroma*

bushy hill near edge of cliff, abundant, young trees abundant

shrub 1 m. tall, fruit red.

sapling 5 m. tall

leaf veins red, stipules

- erect, later reflexed.

small flat-topped tree,

branched only at extreme

top of trunk, stem - leaves

large, pinnately lobed.

fruit not mature, pendent

"romate machi" | yellow when ripe

- not eaten. ^{7 m. tall leafy from half-}
way up.

sapling 5 m. tall, fls

white, fleshy, fragrant.

- "guacillo"

decumbent, fls white.

shrub 3 m tall, infl.

pale green, fls. bluish.

lobes green.

shrub. "caspicaracho"

said to be very poisonous

to the skin.

tree 8 m. tall, 2 dm. thick, fls.

white. Bark apparently with

very little fiber. "balseo"

Data on Cinchona from Schultes' memo dated Feb. 3, 1943, entitled "Quinine in Vicinity of Pitalito, Huila".

Cinchona was seen at three localities, all apparently the same form, called "quina tuna". All of these localities were apparently at the headwaters of the affluents of the Rio Villalobos, above Yunguillo, in Cauca, in detail as follows. Source of Rio Cauchos - ridges have considerable "quina tuna" including many large trees.

Alto de Petroles, ridge near Quebrada Hedionda "quina tuna" up to 200 per hectare, including some trees one foot or more in diameter.

Alto de Guayabos, apparently running west from the head of Rio Guachicas, and a ridge at the head of R. Guachicas. Here "quina tuna" (Schultes 5239) is very abundant, 1500 (average) and even as much as 2000 small trees per hectare mostly about 2 inches in diameter.

Schultes says these ridges are sub-paramo.

His no. 5239 is very similar to my plants from above Palestina (Feb. 6-7), with pointed stipules, acuminate leaves, but the twigs, petioles and veins strigose.

1943 - Colombia

Feb 24 - caño tipo, bet. caño Aguas Claras
and caño grande,
4.5 km. sw. of Pukuanencia,

caño tipo
 caño grande
 caño tipo
 caño grande
 caño tipo
 caño grande

43 ~~Caecilia~~ *Ranuncula guianensis*

small green plant

44 *Tococa guianensis* Aubl. ^{det} "Jaramilla"

yellowish flowers
 yellowish

45 *Psychotria*

46

47

epiphytic on trunk of tree

48

Weigeltia ... ?

49

Jacaranda

sandy soil quite fine
 and brownish.

tree 10 m tall with a hard
 woody stem 10 cm. in diam.
 bark white, smooth
 green, in the tree petioles
 1 mm wide, 2 mm long
 2 mm wide, narrow
 a petiole along 2 folds
 a 4 cm long, in a crease
 folds not 10 m long, fruits
 green, with a red ring,
 seed to be dissected red

- in tree, berries red
 - shrub 1 m tall, tree-like
 in leaves contain a small
 white, white to red
 flowers, inflorescence red

- in fruit, green in flowers
 - shrub 1 m tall, fls. white

- shrub 2 m tall, inflorescence
 pendent, ripe fruit black,
 mostly immature.

- shrub 1.5 m tall
 more or less horizontal

- single unbranched ~~stem~~
 stem, fls. & fruit pinkish
 tree 30 m tall, 3-4 dm. thick
 flowers lavender-purple.

70150

clump of plants on a small
branch (fallen on ground)

51 (Myrt.)

52 (Marac.)

edge of clearing

53 Psychotria

54 (Lub.)

55 Randia

56 (Myrt.)

Feb. 24 - along Rio Leon, ~~8 km~~ 8 km. s.e. of
Villavicencio, Meta 480 m.
somewhat disturbed "piedmont
forest" (Baker) slender tree,
with much undergrowth

57 Cephaelis

common in undergrowth

58 Palicourea

59 Cephaelis

common in undergrowth

roots fleshy, pale green,
fruits scarlet.

slender shrub 4 m. tall,
- infl. red, ripe fruit black
fls. orange with greenish tips.

- plant erect, stem short
shrub, 1 m. tall, fruit orange
shrub, 1 m. tall, infl.

- pendent, fruit immature.

slender tree 6 m. tall, enlarge-
ments on stem, house small
- ants, fruit immature.

small tree 10 m. tall.

fruit pendent, immature,
when cut with strong
various odor

shrub 2 m. tall, bracts

- greenish, infl. stiff
shrub 2.5 m. tall, peduncle
red, infl. orange, corolla
yellow.

shrub 1 m. tall, bracts
scarlet, calyxes yellow,
corolla cream-yellow, fruit
pyriform, blue.

- 20160 (Acacallis)
 common in undergrowth
- 61 (Helast.) *Monochaetum*
- 62 *Cephaelis*
- 63 *Cochlospermum*
 second growth
- 64 (Rub.)
- 65 *Delaginella*
- 66 *Psychotria*
- 67 *Piparana*
- 68 (Hb.) *Centropogon cornutus* det. McV.
 in second growth
- 69 *Drymaria cordata*
 clearing, rather bushy
- 70 *Jussiaea*
 wet place in clearing
- 71 *Jossypium*
 clearing
- 72 *Triplaris*
 edge of river.

- erect herb, ^{1-1.5 m. tall} flowers scarlet.
- weak herb, leaves purple beneath,
 fls. white, stem winged
 shrub 1.5 m. tall, bracts
 greenish
 leafless small tree, flowers
 brilliant yellow, fibers in
 bark very strong.
- shrub 2 m. tall, fls. white
 stem erect, frond horizontal
 slender shrub, 5 m. tall,
 fls. white, fruits turning
 yellow, then bright red.
 shrub 3 m. tall, fruit pink.
 herbage with lemon-grass
 odor.
- suffrutescent herb,
 fls. pink.
- fls. yellow, about 6-7 mm
 across
- shrub 2.5 m. tall, fls.
 bright lemon yellow,
 turning pink
- tree 13 m. tall, ~~stem~~ branchlets
 hollow, ~~containing~~ inhabited
 by very viscious large
 stinging ants, enlarged
 calyx lobes bright red-pink.
 tree conspicuous in forest.
 wood rather hard.

Feb. 25 - near road to Puerto Lopez,
between (Rio Guenane) and Caño
Zunira, 3 km. s. of Apiaa, 13 km.
s. e. of Villavicencio, Meta

small patch of scrubby ≈ 40 m.
moist forest surrounding a
swale, mostly dry at this
season, but obviously a
pond most of the year,
in savannah-type grassland.
Similar patches scattered
here and there. The soil
is rich and black, a typical
grassland soil. Debris
around anthills, brought
up from below is yellowish.

20173 (Gent.) *Vismia*
edge of woods, pioneer species, com. mor.

74 (Lab.)
grass at edge of woods

75 (Gent.)
grass at edge of woods

76 (Comp.)
grass at edge of woods

77 Gent.
grass at edge of woods

Judging by the amount
of invasion by seedlings
and sprouts of the pioneer
tree and shrub species,
this ~~is~~ grassland is
maintained only by
periodic fires. Otherwise,
in a few years it would
be grown up to bushy,
second-growth forest.
As it is it contains
scattered patches and
individuals of various
palms, including
Mauritia sp., as well
as patches of second-
growth bush and scrubby
forest, in addition to
forests in depressions
surrounding swales
and stream courses.

shrub 4 m. tall, bushy,
- fls copper-color.
- herb ~~with~~ up to 3 dm. tall,
with penetrating aromatic
odor, calyces purple. leaves
very rugose.
erect, flowers greenish-white.
(stem sharply 4-angled)
suffrutescent herb up to
- 1 m. tall, fls. pinkish-lavender.
erect, fl. greenish-white
(stem very slightly 4-angled)

- 20178 (McL.)
grass at edge of woods, common.
- 79 (Stercul?)
grass at edge of woods
- 80 Cuphea
grass at edge of woods.
- 81 (Melast.)
- 82 Panicum
common in grass at edge of woods
- 83 (Gram.)
common carpeting forest floor
- 84 Delaginetella fragilis A. Braun det Killip ¹⁹⁶⁹
common carpeting forest floor
- 85 ?
rare in woods, only one seen.
- 86 (Mys.)
edge of swale
- 87 Miconia ^{(L.) Benth. & Hook. f.}
^{det Killip 1969}
- 88 Myrt.
edge of swale
- 89 Jacaranda
- 90
in mud in swale, ~~it~~ would
be inundated most of year.
- 91
- 92 Ficus
in mud, in swale, common
edge of swale

- fls. pink.
- fl. deep chrome-yellow
- fls. deep rose-purple
- erect herb, fls. pink
spreading from loose tufts
- culms spreading
part with inflorescences
ascending.
- tending to be vine-like, apparently
sterile.
- fls. pale lavender.
- small straggly tree,
leaves with veins obscure,
inflorescences cauline,
many below leaves, white,
flowers white.
- shrub 2-3 m. tall, fls. white,
fruit immature.
- straggling shrub-like
tree, fruit green.
- shrub 4 m. tall, fls. deep
violet, buds glossy.
- fl. bluish
- fls. white, petals 7, then
- straggly tree 7 m. tall,
fruit immature.

20197 *Hirtella*

edge of swale

94 (Colm?)

edge of swale

95 (

mud at edge of water, in swale

Feb. 25 - road to Puerto Lopez
between Rio Guanane and
Caño Zuria, 7 km. e. of Apiay,
17 km. s. e. of Villavicencio,
Meta

481 m.

savanna, with scattered
trees and patches of woods96 *Borreria*97 *Borreria*

in edge of brush patch

98 *Liparuna*brushy patch of second-
growth woods99 *Cleusa*brushy patch of second-growth
woods

Feb. 28 - west slope of Cordillera
Oriental km. s. of Bogota on
road to Villavicencio, 2.4 km. n. of
Parque de la Cruz Verde, Cundinamarca

3300 m.

paramo and subparamo

straggling shrub,
fls. white with dark
red stamens.straggling shrub, fls.
yellow, fruit immature.
fls. blue-lavender, stem
prostrate, leaves distichouserect, fls. white.
fls. whiteshrub 2 m. tall, with
strong lemon-grass
odor, fruit flesh-pink,
pyriform, fleshy.
small tree 5 m. tall,
lactiferous, leaves
fleshy, fruit immature.
leaves paler beneath.

2019

70200

Befania

tall bush on steep slope

01 Viburnum

tall bush on steep slope

02

terrestrial on rocky ledge

03

in tall bush on steep slope

04 Micoma

in tall bush on steep slope

05 Bidens

in tall bush on steep slope

06 Cupressus

paramo, obviously planted
as this and a nearby Eucalyptus
are the only trees in the vicinity

07

heavily grazed flat open
grassy place, common. ^{with} 20208

08

heavily grazed flat open
grassy place, common with "20207"

09

~~flat place sparse~~ low bush with
abundant Espelletia, "paramo"

10

Espelletia
the abundant in this sparse
low bush, ~~paramo~~ on flat
bench, "paramo"shrub 3 m. tall, corollas
rose, sticky, anthers cream
color, filaments white, turning
red with age.shrub 3 m. tall, fls. ivory-
white

erect, fls. greenish-yellow

shrub 1 m. tall, rays
white, disk greenish-yellow,
turning brown

shrub 1.5 m. tall, fls. white

vine-like, climbing in
bushes, fls. yellow.tree 6 m. tall, branches
rather drooping.

fls. bright yellow

fls. white, buff toward base
of ligulesrhizomes short, caespitose,
erect, fronds erect, stiffish.almost acaulescent, with
large rosette, scapes
axillary, fls. yellow.

- 20211 *Befaria*
scattered in sparse low
brush, or "paramo" on wide flat
bench
- 12
in sparse low brush or "paramo"
on wide flat bench
- 13
rare in sparse low brush or "paramo"
on wide flat bench
- 14
sparse low brush or "paramo"
on wide flat bench
- 15 *Berberis*
rare in sparse low brush or
"paramo" on wide flat bench
- 16 *Lobelia tenera*
fairly common in sparse low
brush or "paramo" on wide
flat bench
- 17 *Halenia*
small colony in sparse
low brush or "paramo" on wide
flat bench.
- 18 *Graphalium*
rare in sparse low brush
or "paramo" on wide flat bench
- 19 *Gentiana*
rare in sparse low brush
or "paramo" on wide flat bench
- 20 *Hedyotis*
common in sparse low brush
or "paramo" on wide flat bench.

- shrub 3-4 dm tall, fls.
rose, sticky, anthers
cream-color, filaments
- pink, turning red.
low, spreading, fls. white.
- erect, flowers bright purple.
- shrub, m. tall, fruit dull
dark red.
- shrub, m. tall, leaves stiff,
revolute, white beneath,
- fruit dark blue, glaucous,
calyx deep purple-black,
corolla blue-lavender.
- fls. greenish white.
- erect
- fls. varying shades of purple.
- shrub 3-4 dm. tall, bushy,
buds purple, fls. white
or very pale lavender inside,
purplish outside.

- 20221 *Digitalis purpurea*
 common weed in sparse
 low brush or "paramo", also
 common along roadsides

Feb. 28 - eastern slope of
 Cordillera Oriental,
 on road to Villavicencio
 above and of Chipaque.
~~at~~ just below Paracale
 la Cruz Verde, Cundinamarca
 sparse brush, 3300 m.
 transition between "paramo"
 and "subparamo", on sloping
 bench.

- 22 *Hedyotis*
 common
- 23 *Vicia*
 rare
- 24
 common
- 25
 scattered
- 26 *Ranunculus*
 common locally in grassy spots
- 27 *Hypericum*
 common locally in open spots
- 28 *Hypericum*
 common

erect herb, up to 1.5 m. tall,
 fls. bright purple, varying
 to white.

shrub 0.5 m. tall, buds
 purplish, fls. purplish
 outside, white or pale
 lavender inside, leaves
 stiff, with a white band
 - beneath.
 several spreading, vine-like
 stems from common root,
 - fls. purple
 shrub 1 m. tall, fls.
 - magenta, buds sticky,
 fls. bright yellow

fls. bright yellow, leaves
 tending to be vertical.
 fls. yellow

erect shrub 0.5 - 1 m. tall,
 leaves conspicuously 4-ranked,
 fls. bright yellow.

20229

small colony in open place

30

rare

31 Valeriana
scattered32 Lycopodium
scattered in colonies33 Palicourea
~~not common~~ occasional34 Acaena
common, especially in grazed
places35 ~~Lesnetta~~ Gaultheria
common36 Paepalanthus
common in wet places37
scattered, terrestrial

38 Valeriana

39 Plechnum
common, especially in wet places40 Castilleja
rare, in grazed places~~41~~

41

ligules white inside, with
purplish stripes outside,
disk yellow.shrub, 1 m. tall, ~~fruit~~
oily-aromatic when
broken, fruit green.somewhat caespitose,
fls. white, inflorescence
dull, dusty-purple
extensively creepingshrub about 1 m. tall,
leaves paler beneath,
fruits ^{very dark} blue-green
low spreading bushy
shrubstiff densely branched
shrub 1 m. tall, fruits
turning purplish.
rosettes almost caulescent,
heads gray.scapes erect or almost
so, fls. bright chrome yellow,
probably same as # 20231, but
rosettes smaller, flowers
white, infl. purplish
rhizomes short, erect
buds erect.tips of bracts red,
pubescence glistering
white.aromatic when broken,
fls. white.

- 20242 Castilleja
scattered
- 43 Juncus
rare (only one seen) in wet places
- 44 Carex
rare (only one seen) in wet places
- 45 Lobelia tenera
small colony growing in
a clump of spiny bromeliads
- 46 Carex
rare, one clump seen
- 47
scattered
- 48 ~~Carex~~ Alchemilla
very common
- 49 Geranium
common
- 50 Rubus
common
- 51 Castilleja
rare (only one seen)
- 52 Cerastium
occasional
- 53
rare
- 54
small colony
- 55 Pernettya
common
- 56 Hypericum
common locally
- 57 Bidens
- 58 Geranium
common in open places

- tips of bracts red, calyx
red, edged with yellow,
yellow inside, galea
green, lower edge yellow.
small tuft.
- calyx purplish-black,
corolla purple
- caespitose, culms
spreading-arching.
dense bush 1.5 m. tall,
fruit green.
- scapes weakly ascending,
fls. rose with darker veins,
spreading, low-arching
bush, fls. pink.
- suffrutescent; tips of
bracts and calyx red.
- climbing in clumps
of bushes, fls. white.
- bush 1 m. tall, fls. yellow.
- creeping, more or less prostrate
- low shrub, leaves pale
beneath, fruit black.
- bush up to 1 m. tall,
fls. yellow.
- fls. yellow.
- fls. pink

20259

rare

60 Eupatorium
common61 Galium
occasional62 (Melast.)
common63
very common64 Liabum
occasional65
common66 Cestrum
occasional67 Palicourea
occasional

Feb. 28 - eastern slope of
Cordillera Oriental on road
to Villavicencio, above and
of Chipaque, below
Passo de la Cruz Verde, Cundinamarca
remnants of "subparamo" [3250 m.
a bush between cleared patches,
on ~~steep~~ slopes.

68 Baneria
common along road cuts

scandent shrub, several
m. long, corolla deep orange,
column whitish, anthers
dull blue-black, fruit green,
- depressed-globose.

- weak shrub, stems
spreading to ascending,
- fls. white.

- vine-like, fruits fleshy,
- orange.

- shrub 1.5 m. tall, sticky,
- bracts red-purple.

- rounded, densely branched
- shrub, fls. whitish.

- vine-like, fls. bright
- yellow.

- shrub 2-3 m. tall,
- fls. deep red.

- shrub 1 m. tall, fls.
- greenish-white.

- shrub 1 m. tall, fls. dull
yellow. (probably same
as # 20233)

vine hanging over road
cut, fls. white.

- 20269 *Pernettya*
 70 *Calceolaria mexicana* Benth. subsp. *mexicana*
 wet ground around spring
- 71 *Drymaria*
 wet ground around spring
- 72 *Graphalium*
 common
- 73 *Gaultheria*
 common
- 74 *Rubus*
 common
- 75 *Bocconia*
 occasional but just
 at this altitude
- 76 *Castilleja*
 common
- 77 *Nertera granadensis* (L.f.) Bruce
 common on cut banks

Mar. 7 - from train, Girardot to
 Ibaque, Tolima.
 An interesting river Arroyo
 on Rio Coello above Gualanday.
 Above this, clear to

- Act. Malau
 1962
- low shrub, fruits black.
~~wet ground around spring~~
 plant succulent, reddish,
 fls. yellow.
- plants spreading to ascending,
 petals white, bifid.
 weak, elongate extensively
- branched herb,
 weak shrub, fruits
 black, fleshy.
- low spreading shrub,
 fls. white, fruit black
 when ripe, sour.
- tree-like shrub, 4 m.
 tall, ~~late~~ later range,
 not abundant, leaves
 blue-glaucous beneath,
 inflorescences pendent
 with ascending fruits.
 these not quite mature.
- suffrutescent, 1 m. tall
 distal half of bracts
 and calyx red, galea
 green, edged below with
 orange-yellow.
- prostrate, mat-forming,
 fls. greenish-yellow,
 fruits bright coral red.

Ibaque is a tremendous
 flat plain or sabana,
 similar to that of Bogota, but
 at a little less than 1000 m.
 Ibaque is at the foot of the Mts.
 above this plain.

Mar. 7 - ~~at~~ Cordillera Central
between Ibaque and Armenia.

The road winds through
a pass, south of the Quindío,
going over the hump at 10500 ft.

The mountains are quite
rugged and the canyons deep.

The vegetation has been
practically destroyed within
sight of the road. Over-
grazing is not extreme, yet.

There are no paramos
in sight of the road, even
at the top.

Palms, which may be *Ceroxylon*,
still exist near the top, where
a little forest is left.

Along the road cuts several
species of orchids are
remarkably abundant
and showy. *Condaminea*
is one of the commonest
plants, flowering when
only a small shrub, and
behaving like a weed.

More trees ~~are~~ remain on
the west slope than on
the east. *Quercus* sp. is
still found along the road.

On the whole trip, not a single
Cinchona or *Ladenbergia* was seen.

Mar. 7 - Between Armenia and Zarzal
bamboo is so abundant as to dominate
the landscape.

Mar. 9 - Along the railroad
from Cali to Popayan.

Between Cali and Timba
the Cauca Valley is much
like that of the Magdalena
above Girardot, flat
mostly pasture, with
scattered trees and
wooded stream-courses.

Much bamboo near the
streams. From Suarez, the
train climbs up to a rolling
plateau at about 1400-1700 m.

North of Morales, the
wooded ravines and
steep places are covered
with second growth,
one of the dominant plants
being *Ladenbergia magnifolia*.

abundantly
fruiting

South of Morales this
became scarcer and
Cinchona pubescens
appeared and became
extremely common in
second-growth and along
fence-rows as far as
Piendamón and on toward
Popayan. It is especially
common at about 1500-1700 m.
west of Tunia. The plants
were flowering and fruiting
abundantly, and had erect
stipules.

near
 Mar. 14 - Rio Molino about 6 km.
 above (s.e.) Popayan, Cauca
 1900 m.

- 20278 *Cinchona pubescens* Vahl
~~small tree~~ common in
 small patch of woods
 in ravine. ~~etc.~~

Mar. 14 - vicinity of confluence
 of Rio Anambio and Rio Vinagre,
 about 2.5 km. w. of Purace, about
 22 km. e. s.e. of Popayan, Cauca
 road cuts on L 2400-2500 m.
 cleared canyon walls with
 some scattered second-growth

- 79 *Franeria*
 80 *Pellaea ternifolia*
 vertical banks
 81
 vertical banks
 82 *Cheilanthes*
 vertical banks
 83 *Pityrogramma*
 vertical banks
 84 *Asplenium*
 vertical banks

small tree 7 m. tall,
 (others larger)
 10 cm. thick, fls. pink.
 pale inside, coral outside.
 hairs on lobes white.
~~stip~~ leaves dull above,
 veins red, ^{beneath} stipules
 erect, turning red with
 age, inflorescences, fruits
 and, to some extent, leaves
 covered with rust blisters.
 Bark white when cut,
 oxidizing brown, bitter.
 (bark sample) "requeson"

aromatic herb 1.5 m. tall,
 - forming thickets

fronds whitish beneath

fronds very white beneath.

20285 Pellaea

vertical banks

86 Tephrosia

87

88 Coriaria

vertical banks

89

90 Dahlia

abundant on slopes and
embankments

91 Tagetes

common on disturbed slopes
and embankments

92 Besleria

crevices in vertical rock cut

93 Eupatorium

erect herb up to 1 m. tall,
corolla violet, calyx deep
red. Said to be very
useful as an insecticide.

shrub 2 m. tall, main
stem erect, slender,
floriferous branches
horizontal and drooping;
stigmas dark red.

"yuco"

drooping, branchlets
and leaves distichous,
fertile branchlets
pendent, fls. red with
yellow stamens, fruit
dark purple-brown.

erect herb, woody at base,
fls. pinkish to white.

erect herb 7 m. tall,
~~fls.~~ rays lavender, disk
yellow.

erect herb with a very
strong oily, resinous odor,
rays white (with no. 20294)
plant tinged with red,
especially the inflorescence,
corolla lavender with
green lobes, these spotted
inside with deep purple. Red
lvs. pale beneath

erect, fls. white.

- 20294 *Tagetes*
very common on embankments
and disturbed places.
- 95 *Richardia*
roadside
- 96 *Lupinus*
rocky place above road, ^{forming colonies} ~~abundant~~
very locally.
- 97 ~~Solanum~~ *Euphorbia latayi* HBK.
very common, used as
living fence from Popayan
to Puracé, large trees
occasional in second growth.

Mar. 14 - ~~between Rio Molino~~
and Rio Cauca. Road from
Popayan to Puracé, near
Rio Molino, 15 km. s.e. of
Popayan, Cauca. 2100 m

- 98 *Solanum*
common in bushy ravine

Mar. 14 - Puracé, Cauca
in the town 2646 m.

- 99 *Eugenia*
cultivated

- erect, strongly oily-resin
scented, fls. orange.
- (with #20291)
prostrate, fls. white,
- 5-6 parted.
erect herb, flowers violet,
center wedge of banner
- pink, turning red.
Lamproloma shrub, cut back
at top, very milky
when broken, capsules
immature (fruit from
different plant from
flowers. "Lechero"
plant has slight odor of mircaplan

bushy shrub up to 1.5
m. tall, stem prickly,
fls. yellowish, but
~~app~~ apparently mostly
abortive, fruit immature.
(immature fruit used
as a ~~soap~~ soap)

small tree, ~~fls~~ leaves
glossy, fruit said to
be small (1 cm.) and
edible.

20300 *Cinchona pitayensis*

~~tree~~ planted in yard
said to have been brought
from the woods nearby

anal. 5.4%
B+C 1.4%
Ca 3.7%
Fe 1.1%
T.C. 6.9%

~~10.5%~~

01

in yard

02 *Cinchona pitayensis*

in fence-row, possibly planted

03 *Fuchsia*

fence-row

tree about 8 m tall, 15 cm
thick, leaves dark green,
stiff, glossy, veins scarcely
reddish, infl. reddish,
calyx red, corolla dull
purple, becoming red
and larger toward
base, hair on inside
of lobes white, lobes 4-5 (?),
this plant longistylous.
stipules green, erect.
fruit slightly compressed
perpendicularly to septum,
somewhat immature,
some high in tree apparently
opening from apex.
Bark gray outside, white
and bitter within when
fresh, over 1 cm. thick, firm.

- (bark sample)

- small tree, fls. white, ^{fragrant}

- infl. dull purple.

- small tree 6 m. tall, 8 cm. thick.

leaves rather stiff + glossy,

~~is~~ midrib and petioles red,

stipules erect, turning

red when old, inflorescence

and twigs ^{dark} red, calyx green

turning red, corolla dull

purple, hairs white, fruit

not mature, slightly

- compressed; fls. brevistylous.

semi-scandent shrub up to

3 m. tall, fls. vermilion, ^{somewhat} pendent,

fruit immature, leaves dull green.

March 19, Piendamó, 24 km.
n.n.w. of Popayan, Cauca

1750 m.

20304 *Heliconia popayanensis*
second growth, thickets in
steep slope below road

05 *Borreria*
almost vertical road cut
cut in earth.

06
almost vertical road cut
in earth.

07 *Anemone*
almost vertical road cut
in earth.

Finca El Salado.

March 19 - Rio Machete near
its confluence with Rio
Piendamó, 25 km. n. of Popayan,
Cauca

1750-1800 m.

sparse forest which has
had all large trees removed
by lumbering.

08
terrestrial

09
scattered, not common

tree 6 m. tall, 10 cm. thick.
fls. greenish. bark
- tough, sap glutinous.
fls. white

procumbent, leaves in
one horizontal plane,
flowers on under side
of stem, hidden, green
with purple markings
on inside of petals and
- on ~~top~~ column.
erect, unbranched or sparsely
branched 0.5 - 1 m. tall
fruit blue when almost
ripe, black when ripe fleshy,
stones 1-seeded, calyx + bracts reddish.

70310

11

12

in thick humus, apparently ~~scarcely~~ ^{very} abundant very locally

13

Befaria
on ridge top, rather bushy woods.

14

Baccharis
on ridge top, rather bushy woods.

15

Myrsine
on ridge top, rather bushy woods.

16

Miconia
on ridge top, rather bushy woods.

17

Pernettya
on ridge top, rather bushy woods.

18

Weinmannia
common on ridge top, rather bushy woods.

19

Lycopodium
very abundant in places, forming a dense ground-cover

20

Palicourea
common

weak sparsely branched shrub, fruits ~~are~~ few, black, - said to be eaten by children. fl. pink, lvs. said to be medicinal - plant whitish, flowers ~~are~~ yellow.

shrub 1.5 m. tall (others seen as much as 4 m.) flowers bright pink, paler inside, lvs. glaucous beneath. fl. not sticky. shrub 1.5 m tall.

shrub 2 m tall, ripe fruit reddish-black. shrub 1.5 m. tall. fruit fleshy, blue-green.

shrub 1 m tall, lvs stiff, dark green above, pale and reticulate below, fls. white, waxy - shrub 2 m tall, others form trees.

creeping, fruiting branches erect.

shrub or small tree, 4 m. tall, infl. red, pedicels paler, yellowish, ripe fruits black, most of fruits green.

20321

common in more or less open,
rather sterile or disturbed places.
terrestrial

22

epiphytic on shrub near ground

23

Terrestrial

24 Piper

ravine, near water

25

26 *Coccoloba*

common as ground cover

27

scattered

28 *Palicourea*

common, edge of clearing

29 *Hedyosmum*

edge of clearing

30

31 *Palicourea*

erect, up to 1.5 m tall,
fls. white with yellow
on lower ~~side~~ part of lip

fl. greenish yellow.

fls. for 1 m tall caudex
2-3 m. high, from large
caudex and dense root
system. petals rose-pink,
lip maroon-purple, paler
around the cusped edge.

shrub 4 m. tall, leaves
extremely rugose, spikes
pendent.

tree 8 m. tall, fruit green
prostrate, tips ascending,
fls. lavender, fruit blue,
pyriform, fleshy.

shrub 4 m. tall (other
trees), with oily odor when
broken, fls. reddish-cream
color, style green.

shrub 2 m. tall, infl. red,
fruit green.

shrub 4 m. tall, leaves
with an aromatic, faintly
unpleasant odor when
broken, stigmas translucent.

tree with weak drooping
lower branches, calyx red,

fruit

shrub 3 m. tall, inflorescence
purple, fruit green

20332

shaded place near stream
33 *Cephaelis*
~~in~~ in ravine

34

low ground

35

Weinmannia
common

36

o

37

Cinchona pubescens Vahl.
common, especially in open
places and near clearings.

Mar. 19 - about 3 km. s. of Piedras,
21 km. n.n.w. of Popayan, Cauca.
hilltop with bushy second growth. 1850 m.

38

Arneria
bare road cut

39

grass, spot.

flowers scarlet

shrub 1.5 m. tall, stems
green, bracts deep purple,
- fruit green.

shrub or small tree,
branches with tendency
to be drooping or scandent.
fls. greenish, fruit
white, pendent. "grajo"
(inflorescences actually on
leaves)

tree 8 m. tall, bark
- used for tanning "sucavilla."

shrub 2.5 m. tall,
infl. and calyx deep red,
fls. ~~white~~ purplish white, waxy.

Anal. Bellis:
mass of
Cinchona
alkaloids.

tree 10 m. tall, leaves
dull above, roseate beneath,
veins red beneath,
fls. pinkish inside,
with white hairs,
coral outside, fragrant.
stipules erect, green to red.
bark about 1 cm. or more
thick, whitish when cut,
oxidizing red-brown (bark sample)

fls. white

fls. yellow

70340 Mimosa
common

41
common

Pyrenium "carabraw" is very abundant in many places. Along the river it forms great trails, and in upland ravines smaller ones. The canes are used in home construction as framework and especially to hold the roofing tiles in place. Bundles of them

Mar. 23 - Road from Popayan to La Union, Nariño.

The entire way is either cultivated or in pasture. A few *Cinchona pubescens* seen in the first few km. s. of Popayan.

The lower flat portions of the Rio Patia drainage, north of Mercaderes, are dry and sterile. Palms are noticeably absent here. The region around Mercaderes is one vast pasture.

The valley around La Union is devoted to sugar cane, corn and "iracá" (*Carludovicia palmata*). The latter is the basis of one of the principal occupations here, the making of Panama hats. Great numbers of the people participate in this in one way or another. The pay to the ones who actually weave the hats is extremely small, and Dr. Mosquera says the occupation should be abolished because of its effect on the people. The young leaves of the

semi-scandent shrub, fls pinkish-lavender, fruit immature - erect or ascending, occasionally arched and rooting at tip, fls. orange-yellow. Leaves fleshy. Iraca are prepared by cooking them before they are split into strips of varying widths. The hats as made are not perfectly white, but afterward they are bleached and whitened with a milky suspension of sulfur. They range in price from 1 ps. to 15, here. The price is determined by the fineness of weave.

Mar. 24 - Road from La Union to Pasto, Nariño.

Just s. of La Union, at 6000' saw a few scattered *Cinchona pubescens*. This region is all cleared, though at 8000-8500' it has reverted in places to a sub-paramo bush.

Just north of Pasto the mountains contain forest that is little disturbed. Would be good collecting. In the valley of Pasto the land is almost completely cultivated.

Mar. 26: grade above Encano, above
 Lago ^{La} Cocha, western part of Putumayo
 road cut in cloud forest 2950 m.

20342 Trichomanes

Mar. 26 ^{near} Paramo de San Antonio
 (San Bernardo), between Encano
 and Santiago, western Putumayo
 road cut in sub-paramo (bushy)
 vegetation

43 Fuchsia

44

45 Nertera

on earth banks

Mar. 27 - Sachamates, drainage of
 Rio Mocoa, opposite mouth of Quebrada
 Patoyaco, Camino Herradura, 18 km.
 w. of Mocoa, Putumayo 1700-1800 m.
 Rain forest on steep slope, with
 small clearing.

46

edge of deep ravine

47

edge of clearing

48 Calceolaria

small trickle of water along trail

49 Plantago major

clearing

50

mossy bank along trail, terrestrial

51 Borreria

clearing, along trail

fronds appressed to earth, walls.

- fls. rose-pink, pendent
 - fronds arching downward.
 prostrate, forming mats,
 fls. pale green, fruit red.
 leaves stiff

anal. Bellis:
 not more
 than trace of
 Cuscuta alk.

tree 20 m. tall, ^{2 dm thick} very bushy
 at top and dense. "tuna" being
 harvested as a quina. (bark sample)
 - small bushy tree, fls. white
 with rose purple stamens.
 - corolla sulfur-yellow.

"yaben" used as remedy
 for infections.
 - fls. white.

fls. white

- 20352 *Cuphea*
common weed along trail
- 53 *Blechnum*
- 54
- 55
in deep shade
- 56 *Palicourea*
- 57 *Billia*
- 58 *Ladenbergia*
- 59 *Asplenium*
in humus, occasionally climbing
on lower parts of trees
- 60 *Vittaria*
epiphytic on tree trunk
- 61
in deep forest
- 62 *Cephaelis acillans*
in deep forest
- 63 *Ladenbergia*
in deep forest
- 64 *Blechnum*
in deep forest, common
- 65 *Gleichenia*
edge of clearing

- calyx deep red, corolla
pink.
- rhizome ^{rather} short, erect
shrub, 1 m. tall, stem
speckled, fruit immature
- weak shrub, corolla fleshy,
orange-red, pouch-like, with
small opening.
- shrub 3 m. tall, infl. purple,
fruit immature
- Anal bellies
no wood
than trunks
of *Amelanchier* all. *all.*
- tall tree, 30 m, 4 dm thick,
"naranja" ^{bark} being harvested as
a quina (Bark sample)
- from a tree that had been cut several
days - bark being harvested
as a quina bark. "requeason"
long naked tips of fronds
rooting and developing new
plants
- shrub 4 m. tall, slender,
fruits immature.
- weak shrub, fruit blue,
fleshy, obovoid.
- small sprout "requeason"
bark being harvested as quina.
- rhizome elongate, climbing
trees, closely appressed to
trunk, sterile fronds in
stories, with gaps of bare
rhizome between, fertile
fronds terminal.
- stip erect, blades arcuate, more or
less flat topped, revolute. Forming low thickets.

Mar. 28 - Drainage of Rio Mocoa,
below Sachamates, below
mouth of quebrada Patoyaco,
Camino Herradura 17 km. w. of
Mocoa, Putumayo 1600 m.
trail along steep canyon
side, rain forest.

- 20366 *Guettarda*
in small ravine
- 67 *Drymaria cordata*
cleared space beside trail
- 68 *Gynandropsis*
cleared space beside trail
- 69 *Kohleria* sp. nov. det. Wiehler 1972
cleared space beside trail
- 70 *Lasiacis*
base of cliff
- 71 *Psychotria*
second growth on steep slope
abundant locally
- 72 *Palicourea*
rocky slope at base of cliff, shaded
- 73
rocky slope at base of cliff, shaded

small tree 6 m. tall, wood
brittle, fls. white, edges of
lobes crisped, fruit immature,
stems prostrate at base,
ascending through weeds.
fls. white

herb 2 m. tall, fls. orange
with green stamens,
fruit green, valves
recurving on dehiscence,
~~the~~ exposing fleshy
placenta and blackish seeds.

weak suffrutescent
herb, fls. deep scarlet,
marked with purple in
throat

forming low tangles

shrub 4 m. tall, fruit
dull translucent blue.

inflorescence yellow.

fruit immature
suffrutescent herb, 3 dm. tall,
fls. white, fruit immature.

Mar. 28 - ridge above Sachamates
 drainage of Rio Moco, opposite
 mouth of quebrada Patoyaco,
 18 km. w. of Moco, Putumayo
 1750 - 1900 m.

Rain forest

20374

Cinchona officinalis L.

on edge of precipice, only one seen

Anal. Bellin
 no more than
 traces of
 alkaloids

75

76

77

Ladenbergia?

edge of precipice

78

Burmeistera

~~edge~~ woods, along trail

400 m.

- tree 15 ft tall, 2 dm thick
 at base, leaves glossy, old
 ones bright red, stipules
 erect, pale green, flowers
 purple (only one open) calyx
 and immature fruits deep
 red. Bark corky and rough
 outside on trunk, 2 cm. thick,
 white inside oxidizing
 brown gray on branches
 and checked, 1 cm. or less
 thick. (bark sample)

Anal. Bellin
 not more
 than traces
 of cinchona
 alkaloids

large tree 40 m. tall, 6 dm. thick,
 wood brown at center, hard
 outer wood rose color, leaves
 stiff, bark thick, red, bitter,
 being harvested as quina,
 called "calicaya" or "casarillo"
 (bark sample).

- tree, lactiferous, fruit immature
 sprouts from a fallen tree, not
 seen fertile.

- suffruticose herb 2 m. tall,
 with an elusive shrub-like
 odor, fls. pale green, touched
 with brownish outside,
 fruits inflated

70379

along trail in woods and at
edge of clearing.

- 80 *Ladenbergia*
dense woods
- 81 *Psychotria*
dense woods
- 82 *Hymenophyllum*
epiphytic on tree trunks
- 83 *Psychotria*
in woods
- 84 *Acalypha*
in woods
- 85
edge of clearing
- 86
small colony in edge of clearing
- 87
isolated plant in clearing
- 88 *Condaminea corymbosa*
in clearing at edge of ravine
- 89 *Burmeistera*
in clearing, wet place
- 90
at edge of clearing

- scandent shrub, lactiferous,
fls. scarlet outside, orange
inside, calyx dark red,
stamens yellow, fls.
born on long pendent
almost naked branches.
tree 20 dm. tall, 3 dm. thick,
fruits all dry, bark being
harvested as a quina.
"requeson" (bark sample)
shrub 2 m. tall, stipules
divergent, fleshy, fruit
white.
pendent.
- shrub, 1 m. tall, fruit immature.
- slender, sparsely
branched shrub 3 m.
tall, inflorescences weak,
style white.
low suffrutescent herb,
fls. white.
erect, forming a dense
patch, fls. white.
tree-like shrub 4 m. tall,
no fruits in inflorescences.
small sterile plant -
said to be "barniz de pasto"
herb 1 m. tall, fls. green
with brownish tinge
plant with elusive shrubby
odor.
semi-scandent shrub.

no more
than traces
of *Lindera* etc.

March 29 - ~~at~~ Rio Luauanga,
 drainage of Rio Mocoa, above
 mouth of Rio Patoyaco, 18-20
 km. W. of Mocoa, Putumayo.
 second growth in cleared
 trail-side in rain forest.

20391 *Siparuna*

92 *Siparuna*

93 *Palicourea*

94 *Lycopodium*

wet rocky cliff in sparse vegetation

95 *Fuchsia*

abundant from here up to 2050 m.

1700 m.

shrub, sparsely branched,
 branches quadrangular,
 elongate, ~~the~~ foliage
 with a slightly aromatic
 slightly unpleasant
 odor, fruits pyriform,
 flesh colored, papillate,
~~it~~ occurring in axils
 of leaves and in clusters
 on lower part of branches,
 pendent. Leaves very rugose.
 slender shrub, fruit spherical,
 greenish-red, smooth,
 leaves almost smooth,
 plant with a rather
 weak unpleasant
 aromatic odor.

shrub 2-3 m. tall, infl.
 yellow, pendent, fruit
 immature.

1875 m.

erect.

2000 m.

low bush, 1 m. long but weak,
 fls. scarlet, fruit purple-black,
 fleshy, leaves rugose.

20396

common in clearing

97 *Bomarea*

scattered in brush

98

epiphytic on mossy tree trunk

99 *Cinchona pubescens* Vahlon steep rocky slope in wet forest
Mar. 29 - upper part of Rio Minchony,
drainage of Rio Moroa,

2500m

20400 *Epilobium*sandy patch, in rocky
stream bed01 *Fuchsia*along rocky stream bed,
abundant also along cleared
sides of trail in second growth02 *Gunnera*scattered in woods from
here to summit, growing
with another much commoner
species.

03

on rocky cut banks above trail, abundant

Mar. 29 - ~~headwaters~~ small affluent
of Rio Putumayo, along Camino Vernaduna
(to Moroa), above San Francisco,
Putumayo

2500m

talus above trail

04

herb up to 1 m. tall, with
powerful stinging hairs,
- petals orange.
flowers scarlet.
plant semiscandent.anal. Bellis.
qtc 0.6
ci 0.7
bu n
TC 1.4Tree 10m. tall, 3 dm. thick,
older leaves reddish, especially
beneath. leaves with a
mildew of some sort. stipules
green, reflexed. (bark sample)
erect, flowers white,
turning pinkish, calyx
greenish red.weak shrub 1 m. long,
flowers scarlet, ripe
fruit purplish black, fleshy.trunk erect, 1 m. tall, 2 dm.
thick, leaves ascending,
infl. ascending.

fl. white.

suffrutescent herb with rather
rank odor, 3 m. tall, fls. yellow-
green, stamens purple distally.

- Mar. 30 - Sibundoy, Valle de
Sibundoy, Putumayo 2200 m.
20405 *Monnina*
edge of cultivated plot
06
in garden near house of
an Indian herb doctor

- April 2 - Encano, north end of
Laguna de la Cocha, Putumayo
partially cleared 2850 m.
foothills above the lake,
formerly dense rain forest,
patches now remain

- 07
patch of brush on a low ridge

- 08
parasitic on various plants,
principally compositae

- 09
pendent over edge of road
cut (other plants are
flat roadsides)

- 10 *Oxalis*
cultivated on cleared slopes
in rich black soil

shrub, fls. blue

erect shrub 3-4 m tall,
flowers white, ~~simple~~
somewhat irregular.
Plant apparently sterile,
as old flowers seem to
drop off, and the people
say it never sets fruit.
"culebra borrachero".
Planted here, not seen wild.

shrub 1 m tall, fls.
cream color, slightly reddish
outside.

leafless, stems brownish
purple, fls. open wide
- white, pinkish outside
prostrate, forming a
mat, fls. white.

stem and leaves rather
fleshy, fls. yellow. roots
yield tubers which are eaten
like potatoes, called ~~the~~ "oca"
mature in 9 or 10 months here.

20411

cut bank of road

- 12 *Oenothera*
grassy bank
- 13 *Weinmannia*
patch of woods on steep slope
- 14 *Cinchona pitayensis* Wedd.
patch of woods on steep
slope, scattered in the region.
- 15 *Vittaria*
epiphytic on mossy tree trunk
- 16 *Gentiana*
roadside bank
- 17 *Galium*
bush along trail
- 18 *Palicourea*
in patch of woods
- 19
in patch of woods
- 20 *Psychotria*
in patch of woods
- 21
bush along trail, abundant

herb 1 m. long, drooping
over bank, fls. white with
reddish marks outside,
basally.

spreading from a thick
root, fls. scarlet,
- yellow distally.
- shrub 3 m. tall.

anal. Ballis:
G+C 1.9%
Ci 2.34%
Qui 0.17%
T.C. 4.3%

tree 10 m. tall, 1.5 dm thick
all fruits apparently opening
from summit. Bark being
harvested. (bark sample).

pendent, fronds rather
- thick and slightly spongy
fls. ~~to~~ deep lavender,
~~petals~~ corolla lobes
- reflexed in mature fls.
vine-like, very scabrous,
- fls. greenish, fruit dark brown.
shrub 3 m. tall, infl.

- purplish, fls. bluish.
vine-like ~~herb~~ suff
pubescent herb, lactiferous
fls. reddish green, fruits
- pink, somewhat inflated,
shrub 2.5 m tall, fls.
purple outside, lavender
within, ^{mature} fruit bright blue.
- fleshy, mostly immature.
shrub 2 m tall, fls.
bright purple.

20472 *Thalictrum*23 *Cyclanthera cordifolia* Cogn. det. Jeffrey 1974
bushy wet trailsidebushy ~~trailside~~ trailside24 *Tropaeolum*
bushy trailside

25

26

weed cultivated slope

27 *Viola*weed in pasture, probably
escaped from garden28 *Siparuna*

tree in fence-row on hill

29

fence-row on hill

30

~~tree~~

herb, 1 m. tall, fls. purple

herbaceous vine climbing
in small trees, fruits
dehiscing in 3 valves
when still green, fls.
greenish white.- herbaceous vine
climbing in brush,
fls. with a few coral red
with tip green, lobes
green, petals deep
- maroon - purple.

- fls. flame orange

- bushy herb, 1 m. tall and
wide, tangled, calyx
purple-black, corolla
greenish-white, fruit
- reddish when ripe.- upper petals purple-black,
lower ones variously white,
yellowish or lavender,
marked with purple.- tree 6 m. tall, calyx
waxy, yellow, turning
green, plant aromatic
somewhat like lemon oil,
leaves very rugose.

- no fruit setting.

- vine-like shrub, flowers
crimson, staminal column
- white, anthers gray.- fls. ~~with~~ variegated
yellow, brown, and green.

20431

Fuchsia

bushy patches around cultivated slopes.

32 *Cinchona pitayensis*

bushy patch, edge of cultivated field.

33 *Palicourea*

bushy slope

34 *Morina*

bushy slope

35 *Galium*

climbing in brush

36 *Nertera granadensis*

of moist earth bank

~~*Strophopodium*~~April 2 - grade above Encano,
Laguna La Cocha, road to Pasto,
Putumayo 2960 m.
steep slope below road, cleared.37 *Lycopodium*

38

erect suffrutescent herb
hypanthium flesh color,
sepals green, petals scarlet
- fls. pendent. fruit immature

anal. Bellis

Q+C 2.3%

Ci 2.9%

Qui 2.1%

TC 3.3%

(9904 2.4%)

small tree, obviously

a grown root sprout,

5 m. tall, branched from

near base, base 12 cm. thick.

sterile (barb sample)

shrub 3 m. tall, infl.

deep purple, fls. blue,

infl. fading somewhat

greenish when in immature

fruiting condition.

shrub 1 m. tall, fls. dark

blue, fruit pinkish.

vine-like, fruits orange,

fleshy.

prostrate, mat-forming,

fls. yellowish-green, fruit

coral red, juicy.

clumps, stems very white,

leaves green.

scape reclining, fls. chocolate

brown with yellowish

crisp edges to petals,

yellow lips to epichile

and yellow rugose thickening

at base of mesothile. fruit

triangular transversally.

138

1943 - Colombia

20439 Phytolacca
common

40

April 2 - near top of grade
above pasts on road to Putu-
mayo,

Nariño

wet slopes, "subparamo" 3150 m
bushy vegetation41 Nertera tetrasperma
forming dense mat on open
earth banks, common.42 Gaiodendron
apparently growing in earth

43 Miconia

44 Stelleria
edge of road cut

45 Fuchsia

46 Oxalis
edge of road cut

47

climbing in shrubs

48 Centropogon
common

Apr. 4 - La Union, Nariño 1850 m.

49

in yard near house

Putumayo - Nariño

139

fleshy, depressed herb,
fls. magenta
- diffuse, ~~at~~ weak herb,
fls. white.leaves stiff, fruit coral red,
fleshy.shrub 4 m. tall, fls.
- yellow, parts spreading
shrub 1 m. tall, fls. deep
- blue.

diffuse herb, fls. white.

small shrub, flowers
- crimson, pendent.vine-like herb, fls. yellow.
marked with red outside
- stems red.scandent herb, leaves stiff,
- revolute, fruit purplish-black.
shrub 1 m. tall, spreading,
fls. orange, staminal
column white, anthers
blue-gray.large caespitose shrub, 3 m. tall,
fls. yellow, column bent downward.
"Ceciba babosa" used as betifuge

Apr. 4 - 7 km. south of Leticia,
on road to Pasto, Nariño, 2000 m.

20430 *Cuphea*
grassy roadside

grassy roadside

51 *Tagetes*

grassy roadside

53 *Cinchona pubescens* Vahl
ledge on precipice, side of
bushy ravine

54 *Borreria*
roadside

Apr. 4 - side of valley of Rio Quiro
directly across from San Jose,
Nariño 1950 m.

55 *Cinchona pubescens* Vahl
wet ravine

Apr. 3 - Rio Pajajoy, about 2 km. w.
of Buenaco, Nariño
rocky sides of ravine not far
above river.

56 *Lobelia*
road cut, rare

ascending, fls. pinkish,

fls. deep yellow

erect rays white, disk pale
yellow. odor like lemon
when crushed

small tree, corollas pink,
deeper outside, with white
hairs. leaves dull above,
veins reddish. stipules

erect fls. fragrant
plant spreading to ascending,
fls. white

shrub 4 m. tall, leaves with
reddish veins, dull above,
becoming red with age,
stipules reddish, erect.
fls. fragrant, corolla deep rose
outside, lighter within, with
white hairs.

fl. dark blue at apex, white
near base.

142

1947 - Colombia

20457

road cut
58 *Ficus*59 *Dodonaea viscosa* L.60 *Selaginella*
road cut, closely adhering to
rocks, forming a mat.61 *Hedyotis*
on rocks and earth ledges

April 12 - Ridge bet. headwaters
of quebrada Silencia and
quebrada Chupadero, (2 main
affluents of Rio Timba on
S. ~~side~~ side nearest source),
17 km. S.W. of Timba, Cauca
rain-forest, largely ~~open~~ 2300 m.
with clearings, ~~very close~~

62 *Psychotria*
dense forest, gentle slope63 *Liparurus*
dense forest, gentle slope64 *Cinchona pubescens* Vahl
dense forest, gentle slope,
scattered large trees,
small ones abundant
around clearings (stipules and
green)

Nariño - Cauca

143

erect, fls. white

bushy tree 6 m. tall, leaves
stiff, figs immature,
speckled with white.
shrub 2 m. tall, fls.
green, with reddish stamens,
fruit slightly inflated.

caespitose, spreading to
erect, fls. white. "romerillo"

shrub 1.5 m. tall,
fls. white, corolla enlarged
at base, fruit immature,
small shrub, 1.5 m. tall,
fruit aromatic, fruit
broadly pyriform, red
with white spots.
tree 25 m. tall, 4 dm. thick,
leaves dull above, when
older no seats beneath,
esp. veins, fls. pink, fragrant
paler inside, hairs white,
bark 1.5 cm. thick, bitter, slight, scaly (dark red)

anal. bellis:
g+c 4
ci 0.5%
gui 2
TC 0.5%

65 dense forest, gentle slopes

66

dense forest, common

67 *Drymaria cordata* v.

common in clearing

68 *Cinchona pubescens*

seedlings and sprouts
abundant at edge of
clearing

69 *Castilleja*

rare in clearings

70 *Bomarea*

scattered in clearings
and edge of woods

71 *Muehlenbeckia tamnifolia*

in clearing

72 *Cinchona pubescens*

seedlings along trail

73 *Palicourea*

woods

74

woods along trail

tree 15 m. tall, 3 dm. thick,
leaves in one plane on
twig.

leaves in one plane, spotted
with red toward tip.

"stake rouge" used to
stop bleeding.

diffusely spreading

— inf. erect, fls. white.

seedling, these varying
greatly in hairiness of
stem, this one is
extremely hairy (see # 20472)

stipules erect, green,
later drooping and
becoming red.

— hairs glistening white.

bracts tipped with

— red, calyx green.

vine about 2 m. long,

woining, fls. orange

(plants seen more than

— uniform.)

vine, fls. greenish.

seedling, these varying

in hairiness (see # 20468)

this one somewhat hairy,

stipules erect, later

— becoming red and drooping

shrub 2 m. tall, erect.

— purple, fruit green.

shrub, fls. or leaves,

yellowish green, fruit white.

146

1947 - Colombia

10475 *Palicourea*
woods

76

on tree trunk in woods

April 12 - near head of
Quebrada Silencio, (affluent
of Rio Timba) 16 km. s.w.
of Timba, Cauca 1300 m.

11 ~~10476~~ *Erythrina edulis*

cultivated, shaded by bananas

April 12 - Quebrada Silencio about
2 km. below source, (affluent
of Rio Timba), 16 km. s.w. of
Timba, Cauca 1550 m.
woods along stream in ravine.

78

Cauca

147

shrub 2 m. tall, erect.
infl. ~~is~~ purplish
green, fls. lavender.

small tree, with ~~many~~
fleshy branches. Fls.
yellowish-green, fruit
abundant, pendulous,
dehiscing while still
green and while still
on tree, seeds large,
dark red-brown,
soft, ~~soon~~ starting
to germinate while
still on tree - cooked
and eaten, have a mealy
consistency and slightly
nutty flavor.
"chacha-fruta" or "chucha-
fruta"

small tree 5 m. tall, fruit
immature.

70479

shaded in woods

80 *Cephaelis*
shaded in woods81
shaded in woods82 *Coccoloba*
cut bank of trail, edge
of woods, prostrate,
extensive, rooted at nodes,
fls. lavender, fruit blue
when ripe.83
shaded in woods84
shaded in woods, only one seen85 *Bocconia*
rocky bank above streamscandent shrub, sterile,
"crucecita" a piece of the stem
a few cm. long boiled in water,
the water then drunk to stop
menstrual hemorrhages.(inf. from Ignacio
who got it from a Choco
Aguero. He and his wife both
- brush for its efficacy).- subshrub, 0.5 m. tall
or slightly more, bracts
dark purple, fruit
fleshy, blue.- slender shrub 2 m. tall,
fruit immature.

"yerba caucana" good for kidneys

slender shrub 3 m. tall,
fls. white, leaves
white beneath:- shrub 0.5 m. tall, fruit
dark blue.- shrub 3 m. tall, leaves
glaucous beneath
old infl. with mature
fruits on stem below
leaves, young one termed
mature fruits washed
with water and used for
orange-cure. latex orange.

20436 *Liparuma*
edge of woods

April 13 - Southeast side
of valley of quebrada Chupa-
ders (largest affluent of
Rio Timba on south side), 16 km.
w. s. w. of Timba, Cauca
bush along trail, 1300 m.
damp and shaded

37

38 *Rondeletia*
along trail in ^{gully} clearing

39 *Palicourea*
in patch of woods

April 13 - Ridge between
lower parts of quebradas
Silencio and Chupadero,
(affluents of Rio Timba),
about 6 km. w. of Timba,
Cauca 1510 m.
cleared ridge, pasture

40 *Coccyprictum*
cut bank ~~off~~ above trail

41 *Polygala*
~~is~~ common in pasture

shrub 4 m. tall, with a
disagreeable odor, leaves
very rugose, fls. yellow above,
fruits not mature but
turning pinkish.
"cojón de chucha", leaves
used for rheumatism.

suffrutescent herb up to
1 m. tall, fls. scarlet.

latex scanty.

erect shrub 3 m. tall, fls.
pink, tube deeper pink
than lobes.

slender erect shrub
3 m. tall, inflorescence
coral red, buds yellowish.

fls. white, fruits blue,
gyniparous, soft.

"yerba de canes" good for kidneys
erect, fls. rose.
"sarpoleta" roots with odor of
wintergreen.

23497

scattered in pasture

April 12 - Rio Timba, 5 km.
above Timba, El Valle
wetwooded bottom lands, 1000 m.
mostly with bamboo and
Panicum.

93 Psychotria

94 ~~Ludwigia purpurea~~
open marshy place

Apr. 13 - Rio Timba at a
narrow rocky place
about 4 km above
Timba, El Valle 1000 m.

95 Radenbergia magnifolia
second growth woods
on slope of ravine

96
second growth woods
on slope of river bank

97 Psychotria
second growth woods on
slope of river bank

Apr. 17 - Rio Timba about
3 km. above Timba, El Valle
small marshy place
in a bed of tiny trickles of
water 1000 m.

98 Xyris
rare

erect, fls. & asexual. white

shrub 2 m. tall,
fls. white,
herb 1 m. tall, fls.
yellow.

tree 10 m tall, 3 dm. thick,
leaves glossy, bark
bitter.
small tree, scaly
catkins green.

shrub 3 m. tall,
fls. white, ripe fruit
red, fleshy.

erect, heads ovoid,
fls. not seen

70449

20502 Eleocharis

Apr. 17 Llanario, on Rio
Timba, 2 km. w. of Timba,
El Valle 1000 m.

01 Solanum
- common in pasture

02 Solanum

03 Solanum rugosum -
weed in pasture

04

weed in pasture

05 Portulaca oleracea L.

06

- thicket in pasture

07 Chenopodium ambrosioides -
weed near house

08

weed in pasture

09 Equisetum

wooded ravine, second growth

erect, at least the green
part of stem, leaves
- stiff.
tufts

shrub 1-2 m. tall, forming
tangled thickets, fls. white,
fruit reddish when
ripe.

"cujacu" evidently
- not eaten by stock.

fls. white "infusion"
used as a disinfectant
- to wash ulcers. "yerba mora"
fls. greenish white.

"sacoba dulce"
fleshy, fls. whitish
"erdolaga" used to soothe
- irritations

woody liana climbing
- in tall shrubs.
very strong odor. "paico"
- used for worms.

fl. yellow. "cargolita"
used with Equisetum to
- make a kidney medicine.
erect, 4 m. tall, mostly
bent over. fruit not seen.

No. 15

edge of guadua thicket near cultivated ground, wet river-bottom land.

edge of guadua thicket, wet river-bottom land.

12 *Banana camara* L.
thicket in wet river-bottom land

13 *Cynoglossum*
weed in wet river-bottom land

14 *Polygala*
weed in cultivated river-bottom land.

15
weeds in wet river-bottom land

16 *Desmodium*
weedy outcrop in cultivated land

17 V.
cultivated land

18 *Stylosanthes*
weedy cultivated land, wet river-bottom land.

erect or reclining, stems conspicuously quadrangular, fleshy, pleasantly acid, fls. bright rose-magenta. "Canaga" used to make a refreshing drink for fever patients. slightly oily odor.

shrub 1 m tall, spreading, aromatic, fls. orange, turning red. "venturosa" or "mompacha" used for whooping cough. erect, with a foetid oily odor, used to flavor adipe and other foods, to which it gives an extremely bad flavor "caliente cimarró". fls. pinkish. root with strong wintergreen odor.

"sa polata"
shrub 1.5 m tall, pubescent reddish, esp. on young parts. fls. white, fruit dark blue when mature. prostrate, fls. indigo.

spreading fls. white or pinkish white with deep purple center. extensively branched herb, basal parts prostrate, elongate, fls. yellow.

158

1943 - Colombia

- 20519 Borreria
weed in wet cultivated river-bottom land
- 20 Diodes
weed in wet cultivated river-bottom land.
- 21 Calceolaria
weed in wet cultivated river-bottom land.
- 22
weed in cultivated land, common
- 23 Borreria
weed in banana patch
- 24 Peperomia
common weed in banana patch
- 25
weed in banana patch
- 26 Commersonia
common weed in banana patch
- 27 Physalis
weed in banana patch
- 28 Stachytarpheta
weed in banana patch
- 29 Croton
weed in banana patch
- 30 Corchorus
weed in banana patch
- 31 Richardia
weed in banana patch

Apr. 24 - Busaco, Nevado 2000 m. bushy pasture

- 32 Lasiacis
thicket
- 33 Borreria
- 34 Verb.

Valle Navas

159

erect or ascending, fls. white

prostrate to erect, stems strongly quadrangular, fls. white, fruit purplish. spreading along

fls. white.

fls. white

stems fleshy, leaves thin but fleshy, erect, monostachy, fls. purple.

decumbent, petals all blue.

fls. same color.

erect, fls. light purple.

erect, green, fls. white.

ascending, fls. yellow.

erect, fls. white.

main culms erect, less than 1 m. tall. branches diffuse.

weakly erect, fls. white.

erect, fls. magenta.

20575 Centaurium

36 Polygalaceae

May 7 - Ipiales airport, about
5 km. w. of Ipiales, Nariño. 2950 m.

grassy field

37 Eryngium acanthe

common

38 Geranium

common

39 Veronica

May 10 - Cali, El Valle. 1000 m.
roadside weed

40 Microtea debilis Sw.

41 Euphorbia

42 Amaranthus

43 Boerhavia

May 17 - 2 km. n.e. of Aguadita, on
a small affluent of Rio Barroblanco,
3 km. n.e. of Fusagasugá,
Cundinamarca 2150 m.
second growth woods ~~on edge of~~
~~wooded ravine~~

44 Palicourea

edge of wooded ravine

45 Cinchona officinalis L.

edge of wooded ravine, a number of
small trees in a "mancha"

fls. purplish pink.

fls. pink, roots with odor
of wintergreen.

slight parsley odor, bracts

green outside, whitish

within, flowers white.

- stems prostrate, fls. pink.

fls. blue-violet.

- spreading, fls. white, fruit sometimes
ascending, tips arching.

- fls. greenish.

herb 1 m tall. stem and

- leaf veins rose-bronze.

several long prostrate

stems spreading from

central root, lvs. glaucous-

pallid beneath, fls. deep pink.

shrub 1.5 m. tall, infl.

- yellow, fruit black. Fls. somewhat

small tree 7 m. tall, 3 cm. thick,

fls. dark red-purple with white hairs

on lobes. (bark sample) ^{actively reddish} few old trees red.

Road Station

920	2.0
930	1.7
940	1.5
950	1.3

20546

- edge of wooded ravine
47 *Cinchona*
wooded slope

(Bell's says appearance of leaf
is between *C. officinalis* & *C. pubescens*,
possibly more like *C. pubescens*)

- 48 *Fuchsia*
in bushes along trail (2000 m.)
49 *Cinchona*
wooded slope

- 50 *Journefortia*
wooded slope
51 *Cinchona pubescens* Vahl
fence row, side of trail

weak shrub 2 m. long, ascending,
- flo. orange.

Small tree

812 2022

82 1172

83 2172

118 2222

sterile sapling 4 m. tall,
branches pendent, appears
intermediate in leaf shape,
no. of veins, stipule shape,
luster of leaves. Both pre-
sumed parents nearby.

- scandent shrub,
- flo. pendent, scarlet.
several strong shoots
5 m. tall from a stump
1.5 m. tall ~~20~~ 20 cm. diam.
looks like *C. officinalis*
with somewhat large
leaves and inflorescence
of *C. pubescens*. Both
presumed parents nearby.
(bark sample) petioles
& midribs red, old leaves
- bright crimson. (bark sample)
shrub forming thicket
- 2 m. tall. fruit immature.
small tree 8 m. tall. flo.
bright coral pink outside,
paler pink inside, very
fragrant, with white hairs.
stipules small, green, erect
at first, soon strongly
recurved, strongly
carinate. leaves green,
only petioles slightly
reddish.

May 17 - $\frac{7}{12}$ mi. n.e. of
Fusagasuga, below Aguabonita,
on road to Bogotá, Cundinamarca
2450 m.

steep wooded slope
20552 *Ladenbergia undata*

53 *Ladenbergia undata*

54 *Palicourea*

May 17, just below San
Miguel (~~by~~ summit of ~~road~~
road bet. Bogotá & Fusagasuga)
above Aguabonita, 10 km.
n.e. of Fusagasuga, Cundinamarca
steep brushy slope 2650 m.
below road.

55 *Cinchona ~~officinalis~~ pubescens*

slender tree 10 m. tall,
fls. white, fleshy,
very fragrant.

tree 10 m. tall, flowers
white, fleshy, fragrant,
fruits club-shaped,
both immature and old.
weak shrub 3 m. tall,
fruit mostly immature,
ripe ones blue-black.

Anal. Mellis

4+C 1.00

Li 1.00

Sp 1.00

St 2.00

tree 1 m. thick, 20 m. tall,
portions of trunk dead,
stipules small, ciliate,
green, at first erect, then
recurved, containing gum
between them when
young, fls. ~~pink~~ coral
pink outside, paler within,
hairs on lobes white,
flowers fragrant. leaves
slightly roseate beneath.
(bark sample)

166

1943 - Colombia - U.S.A. Virginia

20550

Nertera granadensis

steep bushy talus slope

L 57

Centropogon ferrugineus

steep bushy talus slope

58

Fuchsia

under trees

59

Solanum

climbing in trees

May 30 - Sleepy yellow forest
just north of Holmes Run,
- miles s. of Falls Church,
Fairfax Co. Va. USA 35 m
E of bridge at the top of
with patches of second
growth woods.

60

Gillenia trifoliata

roadside, acid soil

61

Lobelia spicata var.

pasture, acid soil

Cund.

Fairfax Co.

167

prostrate, fruit bright
- red, fleshy, fls. pale green.
sprawling suffrutescent
herb, corolla scarlet
without, orange within,
staminal column greenish-
red. fls. 1.5-2.0 in. high;
leaves

Date 1948
Coll. F. R. Fosberg No. Alt.
Remarks (m-estimated)

Occurrence

Locality

Det.

HONOLULU

PLANTS OF THE HAWAIIAN ISLANDS

ident.
or
scarlet
fls.

calyx dark red, petals white
erect, fls. pale lavender

166

1943 - Colombia - U.S.A., Virginia

20550

Nertera granadensis
steep bushy talus slope

L 57

Centropogon ferrugineus
steep bushy talus slope

58

59

60

growth woods
60 *Gillenia trifoliata*
roadside, acid soil
61 *Lobelia spicata* var.
pasture, acid soil

Food
...
...

Cund.

Tainias Co.

167

prostrate, fruit bright
red, fleshy, fls. pale green.
sprawling suffrutescent
herb, corolla scarlet
without, orange within,
staminal column greenish-
purple; anthers purple;
seen.

Date / / 193
Collected by F. R. and V. O. Fosberg
DET.
No.

Remarks

Habitat

Loc.

OAHU

Plants of the Hawaiian Islands

erect,
fls. scarlet.
e.

calyx dark red, petals white
erect, fls. pale lavender

166

1943 - Colombia - U.S.A. *Gillenia*

- 20554 *Nertera granadensis*
steep bushy talus slope
- 57 *Centropogon ferrugineus*
steep bushy talus slope

58

59

- growth woods
- 60 *Gillenia trifoliata*
roadside, acid soil
- 61 *Lobelia spicata* var.
pasture, acid soil

Road
side
slope

Cund. Taurua Co.

167

prostrate, fruit bright
red, fleshy, fls. pale green.
sprawling suffrutescent
herb, corolla scarlet
without, orange within,
staminal column greenish-
yellow, anthers purple;
latex scanty. leaves
fruit green.

Date / / 1993
Collected by F. R. and V. O. Fosberg
DET. No.

Remarks

Habitat

Loc.

OAHU

Plants of the Hawaiian Islands

erect,
fls. scarlet.
e.

calyx dark red, petals white
erect, fls. pale lavender

166

1947 - Colombia - U.S.A. *ingens*

- 20550 *Nertera granadensis*
steep brushy talus slope
- 57 *Centropogon ferrugineus*
steep brushy talus slope

58

59

60

61 *Lobelia spicata* var.
pasture, acid soil

road
- ch.
-
h

Cund. Taurua Co.

167

prostrate, fruit bright red, fleshy, fls. pale green. sprawling suffrutescent herb, corolla scarlet without, orange within, staminal column greenish-yellow, anthers purple, latex scanty, leaves rugose. fruit green.

dent.
erect.
ls.

Plants of the Hawaiian Islands

OAHU

Loc.

Hahua

Remarks

Date

1/193

Alt. m.

Collected by F. R. and V. O. Foster

No.

DET

calyx dark red, petals white
erect, fls. pale lavender

166

1943 - Colombia - U.S.A. *Magdalena*

- 70550 *Nertera granadensis*
steep brushy talus slope
- L 57 *Centropogon ferrugineus*
steep brushy talus slope

60 7

- 61 *Lobelia apicata* var.
pasture, acid soil

2 feet
100
100
100
100
100
100

Cund.

Tampac

167

- prostrate, fruit bright
red, fleshy, fls. pale green.
- sprawling suffrutescent
herb, corolla scarlet
without, orange within,
staminal column greenish-
yellow, anthers purple,
latex scanty, leaves
rugose. fruit green.
- subglobose
scandent shrub.
inflorescences pendent,
hypanthium + calyx
flesh pink, corolla scarlet.
herbaceous vine, fls.
white, fruit blue.

calyx dark red, petals white
erect, fls. pale lavender

166

1943 - Colombia - U.S.A., ingenio

20550

Nertera granadensis

steep bushy talus slope

L 57

Centropogon ferrugineus

steep bushy talus slope

58

Fuchsia

under trees

59

Solanum

climbing in trees

May 30 - Sleepy hollow road
just north of Bolivar
- miles S of Tulla Church,
Tampax Co. U.S.A. 3500
Elev. 3500 m. alt. ca. 3500
with patches of second
growth woods.

60

Gillenia trifoliata

roadside, acid soil

61

Lobelia spicata var.

pasture, acid soil

Cund.

Tampax Co.

167

prostrate, fruit bright
- red, fleshy, fls. pale green.
- sprawling suffrutescent
herb, corolla scarlet
without, orange within,
staminal column greenish-
yellow, anthers purple,
latex scanty, leaves
- rugose. fruit green,
- subglobose
scandent shrub,
inflorescences pendent,
hypanthium + calyx
flesh pink, corolla scarlet.
herbaceous vine, fls.
white, fruit blue.

calyx dark red, petals white
erect, fls. pale lavender

Fontibon, Cundinamarca ^{alt.} 2576 m.
wet roadside in the sabana July 6, 1947

20562 *Datura*
common

~~63 *Cestrum*~~
63 *Cestrum*

3 km. w. of Fontibon, Cundinamarca
edge of yard near house 2576 m.
July 6, 1947

64 *Verbena*
weed in yard

65 *Solanum*

66

67

68 *Datura*

tree-like shrub 4 m. tall
corolla yellow in middle,
green at base, scarlet
distally. Pendent, almost
cylindrical. "borachero"

shrub 1.5 m. tall, fls.
greenish yellow, fruits
shiny, black, fleshy.

flowers bright purple.
- used as remedy for typhoid.
vine-like, climbing
in bushes and on wall,
- fls. white, fruit green.
prostrate, aromatic.
- used in making sauces.
vine twining in shrubs,
leaves fleshy, flowers
- white.

small tree-like shrub
5 m. tall, fls. white or
cream-white, pendent,
- ~~aromatic~~ fruit pendent
immature. "borachero"

M. Villaseca

July 11 - Quebrada El Chico,
above the northern extremity
of Bogotá, Cundinamarca

alt. 2800-3250 m.

low bushy forest in ^{steep} ravine.20569 *Palicourea* 2800 m.70 *Tournefortia* 2800 m.71 *Cuphea*
bush along trail 2850 m.72 *Vallea stipularis* 3000 m.73 *Solanum* 3000 m.74
edge of clearing 3000 m.75 *Eupatorium*
edge of clearing76 *Weinmannia* 3100 m.77
= 3100 m.78
= 3100 m.

shrub 3 m. tall, flowers
greenish white, with
green lobes, ~~which~~ which
are erect, inflorescence
drooping, fruit immature.

shrub 2.5 m. tall,
- fls. white.

weak shrub 0.5-1.5-
m. tall, 2 petals large,
- erect, deep purple.

tree 8 m. tall, with slender
drooping branches,
fls. rose-pink, leaves
somewhat glaucous
- beneath.

shrub 2.5 m. tall, fls.
- white, fruits immature

semi-scandent shrub
forming thicket, fls.

- deep yellow, fragrant.
shrubby tree 4 m. tall,

- fls. white, anthers brown.
small tree, 5 m. tall.

- small tree, 5 m. tall, others
nearby up to 20 m., infl.

- erect, flowers yellow.
shrub 3 m. tall

20577

in clearing

3000 m.

80

edge of clearing

3000 m.

81

Viburnum

3100 m.

82

edge of clearing, common

83

Solanum

along trail

3200 m.

83a

Fragaria
open slope

3000 m.

July 11 - Paramo at head
of quebrada El Chico, above
the northern extremity
of Bogotá, Cundinamarca

Open paramo alt. 3300 m.
with bushy ravines and
great limestone boulders,
slopes moderate.

84

Hypericum

open slopes, common

85

Hypericum
open slopes

86

open slopes and crests, common

87

Castilleja

open slopes

88

Pinguicula

damp places

shrub 3 m. tall, spines
quite variable on same
plant. ligules white,

filaments pink, anthers

- dark brownish purple.

shrub 2 m. tall, flowers

- dark red.

small tree 5 m. tall,

- flowers white.

shrubby tree 4 m. tall

- petals white.

shrub 2.5 m. tall,

- flowers white, fruit green.

flowers white.

erect, sticky, fls. yellow,

leaves conspicuously

- 4-ranked.

- fls. yellow

erect, bracts and calyx

deep purple, corolla pale

- yellow.

bracts and calyx scarlet

distally, corolla green

- with lower edge yellow.

leaves with conspicuous

stalked glands, flowers violet.

leaves revolute.

174

Columbia 1943

- 20539 Hypochaeris
open slope, rare
- 90 open slope
- 91 open slope, rare
- 92 open slope
- 93 Polygonum nepalense Meisn. det. NCF
open slopes, common among
limestone boulders
- 94 under edge of limestone rocks
- 95 Eupellator glandulosa
abundant on open slopes
- 96 Gaiardendron
wooded ravine
- 97 Eupatorium
wooded ravine
- 98 Oxalis
brushy ravine
- 99 Rhynechospora
~~edge~~ opening in ravine
- 20600 Carex
opening in ravine
- 01 Hedysotis
open slopes, common
- 02 Heiracium
open flat places

Cund.

175

ligules white.

leaves distichous
- scape red, fls. ^{pale} yellow
depressed shrub, fls.

- whitish
flowers yellow

- decumbent, fls. pink.

grasses erect

- stems 0.6 m. tall,
topped with a large
rosette, scapes
axillary, erect, flowers
yellow.

- shrub 2.5 m. tall, flowers
white, petals spreading,
shrub 2 m. tall, fls. whitish

vine-like, climbing in
bushes, stems red, flowers
yellow.

culms spreading-ascending

loose tufts, culms spreading

low shrub, stature quite
variable, fls. white,
- purplish outside,
fls. yellow

20604

- open flat place
- 05 common in bushy places
- 06 *Paepalanthus*
common on open slopes
- 07 *Bidens*
in brush sheltered by boulder
- 08 *Nertera granadensis*
in opening in ravine
- 09 *Lycopodium*
open slope
- 10 *Weinmannia*
wooded ravine
- 11 *Peperomia*
wooded ravine,
- 12 *Drimys*
bush between great boulders.

July 12

Neiva, Huila

470 m.

- 13 *Jussiaea*
weed in patio garden, ground
not especially damp.

rays yellow

- shrub 2 m. tall,
fls. rose-pink.
- caespitose, leaves stiff,
- flowers white.
- 2.5 m. tall, weak, flowers
- yellow.
- prostrate, stiffness
of leaves seems to vary
with exposure, fruit
red, juicy.
- main stems prostrate,
~~stems~~ ^{branches} erect
tree 7 m. tall, fls.
- whitish.
- stems fleshy
- shrub 3 m. tall, leaves
white beneath, flowers
white, bark extremely
pungent to taste.

erect, virgate, 2.5 m. tall,
petals yellow, narrowly
obovate, acutish, 6 mm. long,
falling about noon.

156

157

190

195

Specimens collected by
others for F.R.F.

Ladenbergia magnifolia
bet Mondomó and Pescador, on Popayan
- Cali Highway, 42 km. n. of Popayan, Cauca
1700 m. Mar. 16, 1943. F. C. Lehmann V.

Cinchona pitayensis Wedd.
near Quintana, on Rio Las Piedras,
30 km. s. s. of e. of Popayan, Cauca
2500 m.

Mar. 19, 1943 Matias Delgado
"Quina tuna"

Cinchona pitayensis Wedd.
near Quintana, on Rio Las Piedras,
30 km. s. s. of e. of Popayan, Cauca
2500 m.

fruits slightly immature
Mar. 19, 1943 Matias Delgado
"Quina tuna"

Cinchona pubescens Vahl
Buenavista, 6 km. s. of Popayan
Cauca
Apr. 17, 1943 Matias Delgado

Cinchona pubescens Vahl
Chamisal 1 km. n. of Popayan
Cauca
April 17, 1943 Matias Delgado

Cinchona pitayensis
Hacienda Ambachica, near Silvia,
Cauca
April 27, 1943 C. A. Caceres

Cinchona pubescens Vahl
Angelia, on the Huila-Caguada
boundary directly south
of Pitalito, Huila. 2500 m.
July 15, 1943 A. Chajin
stipules green, soon becoming
strongly reflexed.

Cinchona officinalis
Angelia, on the Huila-Caguada
boundary directly south
of Pitalito, Huila 3000 m.
July 15, 1943 A. Chajin
leaves somewhat glossy
above, dull beneath,
stipules light green,
varying from blunt to
pointed, fls. purple.

Cinchona pubescens Vahl
Sabaneta, bet. La Vega
& Facatativa, Cundinamarca
July 25, 1943 Lem Knobelsof

Remigia purdicana
Gomez, on railroad above Puerto
Wilches, Magdalena Valley,
Santander alt. 50 m.
July 17, 1943 E. Bonitto

198

199

200



